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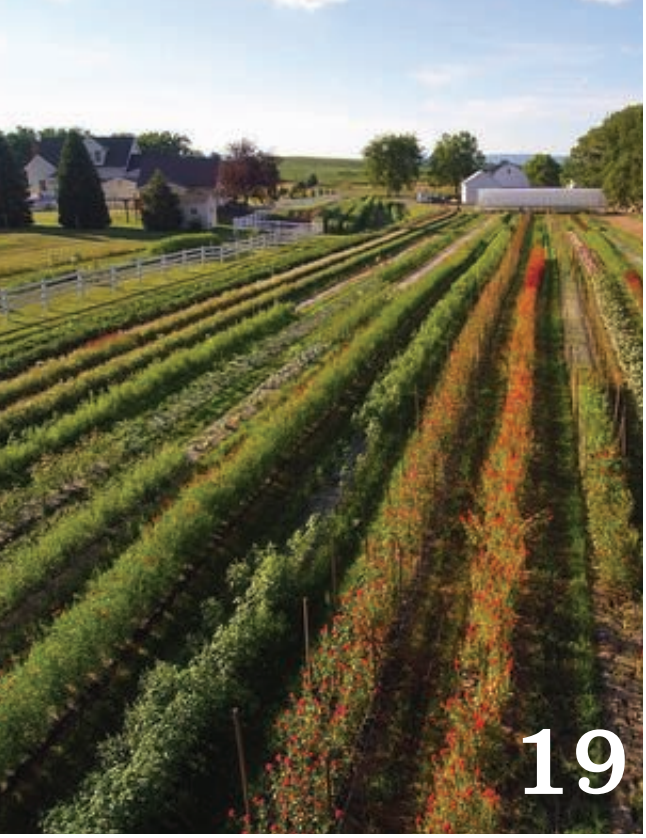
The Cut Flower QUARTERLY

Association of Specialty Cut Flower Growers Inc.

for growers of field and greenhouse specialty cuts



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Cover 'ProCut White Lite' courtesy Barbara Lamborne, Greenstone Fields.

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From the PRESIDENT

Tossing Darts and Making Friends

Dave Dowling

Have you ever tossed a dart at a map to choose a vacation destination, or taken a cookbook and flipped through the pages, stopping on a random page to choose what's for dinner? Now would be a good time to flip through the pages of this issue of *The Cut Flower Quarterly* and stop randomly on a page to choose something new to grow. Every year this edition is packed full of new cut flower cultivars to try. Included are results from the 2017 Cut Flower Trials, and introductions from the many seed breeders and distributors that support the ASCFG.

I'm guessing that since you're reading this on page three, you haven't read the rest of the magazine yet. (I like to think people read my column first, usually on the walk back from the mailbox.) I challenge you to pick five random numbers between 1 and 96. Then turn to those five pages and choose something to new grow from each of those pages. Somewhere on each of those pages is something you likely haven't grown yet. Probably several things. Write down those five items. (Right, like who would have just five items?) Now, go order the seeds, plugs, tubers, bulbs, or whatever it is you need to grow those new items. But do that now. We all know that the early bird gets the worm, right? Well, the early order gets the seed. Don't wait until everything is sold out before making your purchases.

Do you have Raleigh, North Carolina marked on your calendar for late September? It's going to be our 30th Anniversary celebration. We'll be celebrating all 30 years of the ASCFG. THIRTY YEARS! Thirty years of cut flowers. We currently have more than 1,400 members, and a few of you have been with us since very beginning.

People like Jim Nau, Chet Anderson, Hilary Newell, Joe Burns, Lynn Byczynski, Randy Costa, Janet Foss, Will Fulton, Chas and Linda Gill, Bob Hall, Bernadette Hammelman, Betsy Hitt, Al Modena Jr., Mark Koch, Marjorie Kuperus, Gay Smith, John LaSalle, Howie and Judy Lubbers, Roxanne McCoy, Rachel Mordhorst and Bob Nagler, Karen Pendleton, Heidi and Ben Pincus (carrying on Ed's dream), Bill Preston, Jr., Paul Sansone, Bev Schaeffer, Ron Silva, Andrew Lee, Ron Smith, Alice Vigliani, Rick and Karen Vilonen, Fred Van Wingerden, John Zehrer and Phil Mueller, Bernie and Carol Van Essendelft all joined in the early years of the organization, and remain active members today.

Executive Director since the beginning. Judy Laushman has been keeping this bunch of lively, hardworking, dedicated, and sometimes crazy flower growers going the whole time. It's not always been easy, but she, along with Linda Twining do all the work that makes this organization as great as it is.

The ASCFG is a unique group. Unlike some, our members share information freely with each other, both successes and failures. It has been said that the bigger the mistake, the bigger the lesson learned. But who wants to make the same mistake twice? You don't have to if another member has already blundered, and informed others about it. The ASCFG connects growers around the world; membership outside the United States has exploded in recent years. Many of these members have become lifelong friends, connecting not only virtually on our Facebook group, but also in person at conferences and farm tours. How many flower friends do you have because of your involvement in the ASCFG? Possibly more than you can count on your two hands, and probably your two feet too.

I hope to see lots of my flower friends in Raleigh. I plan on meeting a few new ones too.

Dave Dowling is a Sales Representative and Warehouse Manager for Ednie Flower Bulb. Contact him at dave@ednieflowerbulb.com

2018 New Varieties

American Takii

Lisianthus 'F1 Arena III Purple'
This new addition to the Arena series is classified as mid to late flowering. Beautifully-formed flowers have thick, curled petals that are deep purple. The Arena series is available in 18 colors.

Lisianthus 'F1 Arena III Purple Picotee'
'Purple Pictoee' exhibits very stable color with a nice margin. A mid-flowering variety, blooms are large with a good number per stem.

Helianthus 'F1 Sunrich Provence Summer'
Featuring a deeper orange than 'Sunrich Orange Summer', Provence has a double row of well-shaped petals and compact top leaves. The Sunrich series is comprised of 8 varieties, divided into the Summer type which mature in 50-65 days, and standards which mature in 55-70 days.

Cut Flower Kale 'F1 Flare Rose'
Rose-shaped heads with wavy-edged petals (leaves) are held by stems 30 to 38" in length. Long-lasting in bouquets and arrangements. 'Flare White' also available.

'F1 Arena III Purple'

'F1 Arena III Purple Picotee'

'F1 Sunrich Provence Summer'

'F1 Flare Rose'

Ednie Flower Bulb

Allium 'Summer Drummer'
The latest blooming and tallest of all the alliums. The 8" wide flowers are comprised of hundreds star-shaped white and purple florets. Blooms appear in June and often last into August. Height: 4 to 6 feet.

Anemone 'Marianne Velours'
A deep red addition to the Marianne Series of Anemones. Great cool-season cut flower for high tunnel production in late winter and early spring, or late spring field production in northern regions. Height: 14 to 17 inches.

Calla 'Fantasia'
A hot pink calla with the white on the lower portion of the outer petal. Height: 22 to 27 inches.

Calla 'Manila'
A blush pink calla with slight pink veining adds a soft touch to mixed bouquets. Height: 22 to 27 inches.

Daffodil 'Petit Four'
Unique shaped narcissus with a frilly, fully double central cup that transitions from creamy yellow to pink as the flower ages. These sweetly scented flowers are some of the first cut flower bulbs to bloom in the field in spring. Height: 14 to 18 inches.

Dahlia 'Café au Lait Royal'
The lavender shade of 'Café au Lait', the dahlia most often asked for by name, has been selected out and is now offered as a separate color. Makes a great cut flower. A Gloeckner/Ednie exclusive for North America. Height: 44 inches.

Dahlia 'Jowey Morris'
A new addition to the Jowey series of cut flower dahlias. Semi-cactus flower with cranberry-colored petals with white tips. Height: 3 to 4 feet.

Lily 'Exotic Sun'
A fragrant, bright yellow, double-flowering Oriental lily with blossoms reaching up to 8". With each flower producing more than twenty petals, these flowers will command attention. Plants are strong growing and improve in size each year. Height: 4 to 5 feet.

OT Lily 'Touchstone'
An OT Hybrid lily with large, upright buds that become dark red, and open to reveal bright yellow and green highlights at the base of each petal. Fragrant, long-lasting flowers. Great as a cut flower as well as in the garden. Height: 42 to 52 inches.

Ranunculus 'Amandine Purple Jean'
Gorgeous, purple picotee blossoms with varying shades of light purple. Part of the Amandine series, developed to withstand slightly warmer temperatures than other ranunculus, extending the harvest several weeks in the spring. Height: 14 to 17 inches.

'Summer Drummer'

'Marianne Velours'

'Manila'

'Fantasia'

'Petit Four'

'Café au Lait Royal'

'Jowey Morris'

'Exotic Sun'

'Touchstone'

'Amandine Purple Jean'

FlamingoHolland

'Tabledance'

Lily OT 'Tabledance'
This award-winning pink OT lily is a true innovation in lily breeding. It has attractive, color-showing buds, compact structure (36-38"), and large flowers with a unique pink color. 'Tabledance' has an extremely long bloom life. Growing time is approximately 102-106 days with a bud count of 3-5 on a 14/16 bulb.

'Elena'

Roselily 'Elena'
A new addition to the Roselily family is 'Elena'. It is a pollen-free Oriental with large double-flowered blooms. A vibrant pink with a dark rose midrib, this fragrant lily is outstanding for weddings and cut flower bouquets alike, with an exceptionally long flowering period. Growing time is approximately 100-110 days.

'Oriental Premium Blonde'

Lily 'Oriental Premium Blonde'
This pure white Oriental lily has a large, upward, star-shaped bloom. Excellent vase life makes this a terrific choice as a cut flower. 'Premium Blonde' is approximately 27-30" with 3-5 bud count on a 14/16 bulb. Growing time is approximately 100-115 days.

GeoSeed

Ageratum 'Blue Sensation'
Standing strong with tall, 3-foot stems, this cut flower boasts large, ultraviolet-blue flowers. They are sterile, long blooming, and resist deadheading. Great as a field-grown specialty cut flower, knee-high landscape or big container.

Snapdragon Greenhouse Forcing 'Red Delilah'
Novel color pattern among greenhouse types; ruby red lips with white throat in high contrast. Can be scheduled along with the Maryland series with short days and medium light.

***Celosia cristata* 'Crystal Beauty'**
Exotic metallic orange that shades from lighter to deeper from bottom to top. Large fan-shaped blooms can become exceedingly large with pinching. Standing at 3 feet, the plant foliage and stems are light yellowish green.

'Blue Sensation'

'Crystal Beauty'

'Red Delilah'

GeoSeed

***Celosia cristata* 'Green Sango'**
Light green fans, very early flowering. Standing at 40 inches, this cut flower produces single-stem harvests without pinching. Fans are light green and flower very early. For outdoor production. Not disease tolerant. If under glass, provide good ventilation and treat for disease.

***Celosia cristata* Neo Series**
Improved series is less daylength sensitive, with vivid, unique new colors and smaller leaves. Easy to arrange, eye-catching in shops. Premium quality cut flower for greenhouse or field. Comes in Gold, Orange, Pink, Red, Rose, and Mix. Grows 28-40" in height.

***Echinacea purpurea* 'Green Twister'**
Petals start pure lime green with a band of carmine at base, yellow at edges. The carmine band increases so older blooms will have a large neon-carmine zone with distinct band of green at edges. Golden cones mature to mahogany. For premium containers, field-grown cut flowers or perennial borders.

Flowering Kale 'Flare White'
Large, airy open heads with pure white undulated central leaves, with graceful waving edges. Base leaves are deep green. Heads are a good size for shipping. Excellent vase life provides a very durable and attractive product for winter and bridal bouquets. Suited to dyeing in a range of colors.

Stock Quartet Series
Grows 30-36". Spray type habit, branching low on the stem, easy for whole-plant bouquets or numerous mid-length single stems. Easily selected for doubles. Early blooming, sweetly fragrant, strong branching habit, excellent form. Pinching required. Comes in Deep Pink Blush, Deep Yellow, Lavender, Mix, Pink, Purple, Red, and White.

Trachelium 'Lake Michigan Blue'
Grows 30-40"depending on spacing. Broad umbels densely packed with flowers. Wiry upright stems. Long shelf life and ships well. Mid-season Group 3 type for late spring to early summer flowering. Also possible to harvest in fall to early winter from late summer to early fall transplants.

Sunflower 'ProCut White Nite'
Near-white petals of palest yellow with deep black centers. Fits perfectly in the ProCut Series. Single-stemmed, pollen-free, day-neutral with early maturity in 55 days. Highly commercial. Black-seeded type less likely eaten by crows in the field. 3 to 4 inch flowers with broad overlapping petals.

'Green Sango'

Neo Series

'Green Twister'

'Flare White'

Quartet Series

'Lake Michigan Blue'

'ProCut White Nite'

***Euphorbia* 'Forix Bliss'**
Unique red and green flowers bring to mind a poinsettia. Long and sturdy stems make it a perfect ornamental cut for any Christmas decorative needs. Has excellent shelf life, a fast growth cycle, and is a high-yielding product that can be regulated for a continuous harvest. Height: 2 to 3 feet.

Lepidium 'Emerald Beads'
The ultimate filler that adds volume and quality to any flower arrangement or bouquet! Has rich stems with many laterals. It is an eco-friendly product as it has no lighting requirements and can be grown in climates with four seasons as well as in equatorial climates. Height: 3 feet.

Lisianthus 'Voyage 2 Champagne' and 'Voyage 2 Deep Rose'
This is a great, top-flowering series with eight sought-after colors! Large, fringed, gorgeous double flowers sit upon sturdy stems. The strong petals withstand the rigors of shipping. Height: 24-36". Series also includes Blue, Green, Light Apricot, Pink, White, and Yellow.

Marigold 'Falcon Yellow'
Large 3-4" firm, ball-shaped flowers on long, strong stems. Flowers continuously. Height: 3 feet. Spread: 2 feet.

Phlox 'Blushing Bride'
Large clusters of soft blush-colored flowers with a slightly darker eye combine to create an antique appearance. Border and landscape plant, with tall stems, suitable as cut flower with very good vase life. Flowers July-October. Height: 15-25".

Phlox 'Cherry Caramel'
Large-flowered variety with a special color combination in one flower. Blooms are caramel, brown-yellow with a cherry red center, making an impressive variety. Border and landscape plant, with tall stems, suitable as cut flower with very good vase life. Flowers July-October. Height: 15-25".

Phlox 'Sugar Stars'
Stunning and fragrant star-shaped flower with a striking color pattern; blue with white stripes in the center. Border and landscape plant, with tall stems, suitable as cut flower with very good vase life. Flowers July-October. Height: 15-25".

'Forix Bliss'

'Emerald Beads'

'Voyage 2 Deep Rose'

'Falcon Yellow'

'Voyage 2 Champagne'

'Cherry Caramel'

'Sugar Stars'

'Blushing Bride'

Harris Seeds

Hydrangea 'Invincibelle Mini Mauvette®'
Introducing a hydrangea unlike anything that's ever come before. A much-loved 'Annabelle' type with flowers in a deep pink-mauve. High quality Proven Winners® ColorChoice® Shrubs are grown by Four Star and Pleasant View.

Hellebore 'Rosemary'
The bright and cheerful rose pink color of these flowers make other pinks look dull in comparison. Mature outward-facing flowers are a darker pink. High quality Proven Winners® Perennials are grown by Four Star, Pleasant View, and Walters Gardens.

Clematis 'Stand by Me'
A new look in clematis! This non-vining clematis has blue, bell-shaped flowers appearing from late May to June, with some rebloom into the later summer months. High quality Proven Winners® Perennials are grown by Four Star, Pleasant View, and Walters Gardens.

Celosia 'Pampas Plume Mix'
A must-grow! Large feathery plumes are a great textural addition to bouquets, and ideal for organic growers. See these and more than 40 great varieties in our 2017-2018 Harris Seeds Organic catalog.

Ornamental Kale 'Flare™ F1'
All of what you love from an ornamental kale, with a pure white center! Ideal for florists looking to seasonally dye blooms.

Zinnia 'Zinderella Purple'
Zinderella's unique new zinnia flower forms are winning awards in Europe. This fluffy double-crested Purple has strong stems for garden or cut flower use. Now offering three unique colors!

Celosia 'Neo Series'
The next leading celosia for the cut flower industry. An improvement over Bombay with less long-day sensitivity, allowing a longer production season. A more consistent bloom habit will produce more harvestable stems of better quality. Available from seed and high quality plugs grown by Gro'n Sell.

Calendula 'Kinglet Formula Mix'
Growers gravitate to this series for the clean, crisp flowers in bright and cheery colors. A stunning mix of orange, yellow, and apricot.

Ornamental Corn 'Firecracker'
'Firecracker' produces high yields of 5-inch multicolored ears on red stalks that reach 7½' and can be harvested for fall sales. Not only is this corn pretty, this is ideal as a popcorn variety that pops, producing small white flakes.

'Invincibelle Mini Mauvette®'

'Rosemary'

'Stand by Me'

'Pampas Plume Mix'

'Flare™ F1'

'Zinderella Purple'

'Kinglet Formula Mix'

'Firecracker'

'Neo Series'

Jelitto Perennial Seed

Heliopsis 'Bleeding Hearts'
The foliage of heliopsis 'Bleeding Hearts' emerges almost entirely black before settling down to a dark purple. The sturdy stems are black and the orange-red blooms contrast magnificently with the dark stems and leaves. 'Bleeding Hearts' is the first heliopsis without a hint of yellow! Flowers start out scarlet before maturing to a bright orange-red, and then to lingering washed tones of bronze. Excellent as a cut flower.

Echinacea 'Mellow Yellows'
80 cm, light yellow to dark yellow colors, vigorous and sturdy, first-year flowering, flowers June through October, zones 4-8, honeybee food plant, suitable for cutting.

***Gaura lindheimeri* 'Cool Breeze'**
100 cm, pure white flowers with greenish-white stamens and flower buds, very rich and abundant flowering until first frosts, first year flowering from seed, flowers July through October, zones 6-9, honeybee food plant, suitable for cutting.

***Rudbeckia triloba* 'Blackjack Gold'**
100 cm, round and golden flowers with black cone, compact habit, richly branched flowering stalks, first-year flowering, sturdy and long-lived strain, valuable late bloomer, flowers July through October, zones 3-8, honeybee food plant, suitable for cutting.

'Bleeding Hearts'

'Mellow Yellows'

'Cool Breeze'

'Blackjack Gold'

Onings Holland Flower Bulbs

Cloni® Success Ranunculus
A new series of ranunculus from Biancheri Creations. Cloni ranunculus are hybridized and grown in Italy and therefore best known as Italian Ranunculus (also called Clooney ranunculus). Their best varietals, cloned to ensure identical performance. Large-flowering, homogenous production characteristics per variety and color. Flagship varieties include the powdery pink 'Success Hanoi', pastel/peach 'Success Grand Pastel', pink/peach 'Success Venere', and deep purple/black 'Success Nerone'.

Cloni® Pon Pon Ranunculus
Similar propagation procedure as the 'Success' line, these ruffled beauties are truly different and unique. The cloning technique ensures identical color of each plant. The best-known and award -winning varieties are the mauve 'Malva', white 'Iglo', light pink 'Hermione', and 'Mignon'.

Cloni® Success

Cloni® Pon Pon

Onings Holland Flower Bulbs

Elegance Ranunculus
The cloni technique has allowed Biancheri to maintain a very clean stock of plants for the traditional seed-propagated varieties. The Elegance series represents a new generation in large flowers and more intense colors. Best performing varieties are 'Salmone', 'Pastello', the purple 'Viola', and striped 'Giallo' and 'Bianco Striato'.

Mistral Anemone
Breeding techniques have helped Biancheri Creations come up with a line of anemone less susceptible to botrytis. Besides the traditional single varieties, several multi-petalled varieties are now available. The colors are very intense. Very popular is the (Pantone 2018 color of the year) 'Ultra Violet', 'Mistral Blu', the very light pink 'Rosa Chiaro', pink/purple/violet/white/mauve 'Rarity', the large-flowering dark burgundy 'Vinato', and the white with black-centered 'Bianco Centro Nero'.

Colibri Icelandic Poppies
Hybridized and grown mainly in Italy and therefore also called Italian poppies. This is a step above any other cut flower poppy. Very large flowers and strong, straight and sturdy stems. Very cold hardy and productive. Available as seed and as a plug. Best known color is the pastel/peach 'Rosa Chiaro Pastello'. 'Bianco' and 'La Dolce Vita Pastel Mix' also available.

Double Oriental Lilies
Various Dutch hybridizers have now introduced new double-flowering Oriental lilies. Well-tested varieties such as the white and light pink 'Snowboard', light pink 'Waverider,' and medium pink 'Dreamline'. Very productive varieties with good bloom count, light scent, and no pollen.

'American Classic' LA Hybrid Mix
Based on a very successful program of a group of "you-pick" farmers in Europe, Onings can now offer an inexpensive mix of 13 LA hybrid varieties in 7 colors. Because of the different forcing times, each planting will produce flowers over a 3-4 week span. We have eliminated the high cost of packaging a mix of 400 bulbs. Each crate has an identical color/variety mix. We call this mix of lilies the 'American Classic Mix'.

Bianco Striato'

Colibri Icelandic Poppies

'Rarity'

'Waverider'

American Classic Mix

***Gladiolus nanus* (Mini or Baby Gladiolus)**
Mini gladiolus are a great addition for the specialty cut flower market. They are delicate and small, ideal for use in bouquets, yet colorful and voluptuous enough to market by the bunch. Different planting dates can extend your (outdoor) season from June until your first frost. They are easy to grow outdoors and, unlike regular gladiolus, at only 25-27" tall there is no need to protect them from wind or heavy rain. They also have a great vase life of at least 10 days!

Gladiolus nanus 'Alba'

Gladiolus nanus 'Atom'

Gladiolus nanus 'Charming Beauty'

Gladiolus nanus 'Las Vegas'

Gladiolus nanus 'Nymph'

Gladiolus communis byzantinus
This species is by far the earliest blooming gladiolus. It can bloom as early as early May, outdoors! They are very cold hardy to zone 5 or colder. The corms will be available only for fall shipping as it prefers fall planting.

'Atom'

'Nymph'

'Alba'

'Las Vegas'

Gladiolus communis byzantinus

'Charming Beauty'

Sakata

Lisianthus Voyage 2
Voyage 2 is a Group 2 double-flowered series with large, fringed, gorgeous flowers. Its strong petals withstand the rigors of shipping. A great top-flowering habit. Available in Blue, Champagne, Deep Rose, Green, Light Apricot, Pink, White, and Yellow. Stem length is 24-36". Spacing 4x6". Crop time summer to fall, 22-24 weeks.

Lisianthus Rosita 3
Rosita 3 is a Group 3 double-flowered spray series with thick petals, top flowering, and strong stems which all make for easy transport. Excellent vase life with abundant usable buds. Three new colors for 2018: Green, Lavender, and Red. Stem length is 36-48". Spacing 4x6". Crop time summer to fall, 22-24 weeks.

Voyage 'Blue'

Voyage 'Deep Rose'

Rosita 'Green'

Rosita 'Red'

Rosita 'Lavender'

Sunflower Selections

Sunflowers 'ProCut®White Nite' and 'ProCut®White Lite'
Two new hybrids with a color breakthrough in sunflowers, offering new floral opportunities. Single-stem photoperiod-neutral plants produce large flowers with overlapping petals in about 60 days from planting. Flowers start off with a creamy color and rapidly whiten as the petals expand. Great in mixed bouquets with soft colors, and suited for wedding, Easter, and Christmas arrangements. And they can be dyed any color! Flowers are pollen-free.

Sunflower 'ProCut®Orange Excel'
Our best new traditional sunflower is early flowering with deep orange overlapping petals on upright flowers. This single-stem hybrid is extremely uniform with ideal stem length and exceptional flower quality, producing a high yield of salable stems. Flowers are pollen-free.

Sunflowers 'SunFill™Purple' and 'SunFill™Green'
We think our SunFill™ series offers a brand new use for sunflower in any arrangement. No need to buy or grow green fillers for your bouquets. These are solely intended to be used before they ever flower, having been bred to have large fleshy flower buds with either a purple or green pigment. Cut them starting in about 50 days, all the way until the flowers start to open and use them to accent your arrangements.

'ProCut White Lite'

'ProCut White Nite'

'ProCut Orange Excel'

'SunFill Purple' and 'SunFill Green'

Wild Garden Seed

***Calendula officinalis* 'Radio'**
This clear orange calendula with quilled petals is actually new again by being an heirloom revival. 'Radio' was a new calendula back when the radio was a new home entertainment center. Introduced around 1930, this "pot marigold" became a common form for a generation, then faded from production.

***Centaurea americana* 'Aloha Rose'**
An annual *Centaurea* with the appearance of a longhair thistle, but perfectly spineless and silky to the touch. Lavender-rose heads are 3" across, opening from beautifully imbricated buds that are themselves striking. Highly attractive to bumblebees. Grows to four feet, with individual flowers on very long sturdy stems.

***Chrysanthemum (Glebionis) carinatum* Fancy Pants Mix**
This tricolor chrysanthemum has the same visual appeal found in Cape daisies like 'Zulu Prince', where striped petals create concentric circles of color around an intricately patterned eye. This mix has a wide color combination range on 3' tall plants.

***Tagetes erecta* 'Afternoon Lemonade'**
A selection from 'Shades of Gold,' 3 feet tall bearing 3-inch wide lemon yellow blooms, with wonderful marigold fragrance. Actually can be used to make marigold lemonade, marigold mint tea, marigold wine, and marigold *muerte* cocktails, said to be perfect for Day of the Dead celebrations, and bouquets.

***Papaver somniferum* 'Jimi's Flag'**
From a cross of 'Danish Flag' by 'Purple Peony', this simple poppy has a loud presence in any setting, its brilliant scarlet feathered petals offset by their midnight purple splotches. Previously available only as part of the Jimi's Flag Mix, which contains a spectrum of color combinations.

***Rudbeckia fulgida* 'Goldsturm'**
Another "olde thinge" becoming new again in our book. A sturdy perennial adapted to challenging environments, unmatched in its productivity. This 'Goldsturm' seed selection has long, strong stems holding iconic golden flowers with pure black centers.

***Saponaria* 'Pink Beauty'**
A bouncy pink filler that puts delicacy into bouquets while having a sturdy feel. Branching plants reach 3 feet if given support.

'Radio'

'Aloha Rose'

Fancy Pants Mix

'Afternoon Lemonade'

'Pink Beauty'

'Goldsturm'

'Jimi's Flag'

Wild Garden Seed

***Tweedia caerulea* 'Heavenly Blue'**
Admired for the singular dazzling blueness of its small flower clusters, but respected for the challenges of its production, *Tweedia* isn't for everyone. But the rare flower grower will find this milkweed family member rewarding for its uniqueness at market, and its turquoise sky hue.

***Zinnia elegans* 'Jim Baggett's Choice'**
These brilliantly hued and diversely formed zinnias come from the great Oregon State vegetable breeder Jim Baggett, who made zinnias and dahlias his backyard avocation. Huge heads on long stems in spectral extremes of orange, yellow, red, magenta, and pink, with long, sometimes rolled or quilled petals. Spectacular.

***Zinnia peruviana* 'Red Spider'**
A species smaller and more delicate than elegans, the slim bright red petals and fine stems are natural in pairing with grasses, *Tweedia, Saponaria*, and other ungushing items in fine bouquets. Subtle.

'Heavenly Blue'

'Jim Baggett's Choice'

'Red Spider'

William Dam Seeds

Cosmos 'Cupcake Blush'
The most unusual cosmos that we have seen in our trials: fused outer petals make it look like a cupcake wrapper. Blends beautifully in summer bouquets.

Dianthus 'Jolt Pink'
All-America Selections Winner in a stunning shade of hot pink, it blooms even in the heat of summer. With large showy flowers, this will add a pop of colour to your farmstand. Can be cut continuously. Hardy to Zone 6.

Echinacea 'Feeling Blanche'
Impressive first-year blooming variety from France with strong garden performance. The dark foliage contrasts beautifully with the snow white blooms. 'Feeling Blanche' forms large clumps quickly, which allows it to overwinter well. Hardy to Zone 3.

Helipterum 'Sensation Giants'
H. roseum (*Acroclinum*) Paper daisy. Lovely garden plant that needs cool soil to start, but continues to bloom through heat and drought. Fully double in pink and white shades; opens to a yellow centre. Use in hand-tied bouquets or pressed/dried for crafts.

'Cupcake Blush'

'Jolt Pink'

'Feeling Blanche'

'Sensation Giants'

William Dam Seeds

Poppy 'Pandora'
Truly intriguing new annual poppy in moody cranberry shades highlighted with silver-grey streaks. Reminiscent of blooms found in the Dutch Masters paintings.

Zinnia 'Queen Lime-Orange'
Brand new 2018 All-America Selections Winner! Gorgeous shades of warm apricot-coral with the lime centres that we love in 'Queen Red-Lime'. Produces medium-sized blooms all summer long.

'Pandora'

'Queen Lime-Orange'

Labo Plant

Oriental Lily 'Firebolt'
This has to be the darkest red side-facing Oriental lily we have added to our program—it is just stunning, and worth trying out in your program. Best are its smoothly textured petals, which provide a pleasant contrast in any arrangement. Approximately 100 forcing days, 42 inches in height, producing large flowers with a pleasant fragrance.

Oriental Lily 'Jewelstar'
Talk about an exciting new pink Oriental! We have been looking for the next "Stargazer'/'Starfighter' replacement, and we found 'Jewelstar'. This is a nice upward-facing variety that comes equipped with all the dynamics that we are looking for in a production *Lilium*. A variety that can produce fast and with as many stems on a square footage as what we were used to be doing with 'Stargazer'. It has a great flower bud count, so all three sizes can be easily used, with 12/14 already providing you with 2-3 blooms on a stem.

LA Lily 'Fiamma'
One fantastic looking bicolor lily! We suggest using size 14/16, which will give you 3 to 5 blooms. Flower color very closely resembles 'Royal Sunset', which has been holding on due to its unique flower color. 'Fiamma' might just be the one variety that could push 'Royal Sunset' off its pedestal as the best-selling bicolor fall-colored LA hybrid for the last twenty years.

'Firebolt'

'Jewelstar'

'Fiamma'

'Red Rover'

'Villa Blanca'

'Valverde'

TA Lily 'Red Rover'
A fantastic crossing result between trumpet and Asiatic lilies. This beautifully deep red flower stood out to us three years ago in the early seedling trials. Great substance in the flower petals will provide for an intense red color. Growing speed is 90 days and the stem height is 42 inches. It is not the first TA hybrid that has come out, but this one does have all qualities to be a winner.

OT Lily 'Villa Blanca'
Gorgeous blush flower buds show this variety has class in its early market stage. Production time is 100 to 110 days. Plant height is 45 to 47 inches. The stem is very strong, with large flowers. Even though it is an OT, it does fit the lineage of the Blanca lilies you are familiar with. This variety has come through the test greenhouses in Holland with high grades. 'Villa Blanca' comes out of the stables of World Breeding.

OT Lily 'Valverde'
This is a new selection that has the potential to be the replacement for all yellow OTs, and ultimately, a staple lily variety for the North American cut flower market. The stem is very sturdy and provides 4-6 buds from a 16-18 size bulb. What we like about 'Valverde' is that the bulbs store well, so we can continue throughout the year, which is great for late-season plantings. This variety has come to us through the Mak Breeding program.

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ASCFG Trial Program Celebrates its 25th Anniversary

John Dole

Happy Anniversary! The ASCFG is celebrating its 30th anniversary this year. In 1988 Allan Armitage and Judy Laushman came up with the brilliant idea to start an association for specialty cut flower growers. Since then, the ASCFG has blossomed into a robust organization that supports growers and the cut flower industry.

This past year was also the 25th anniversary of the National Cut Flower Trials. Relatively soon after the ASCFG was started, Allan and Judy acted on another notion: help growers decide what to grow by asking them to evaluate new cut flower varieties themselves. In 1992 they set up the first program with 17 Trialers, and 25 cultivars from Ball, Gloeckner, Kieft, Sakata, and Takii. The ASCFG Cut Flower Trials have been operating for 25 years as of 2017. Since 1993, the ASCFG trials have tested 950 seeded cultivars. We expanded the program to include perennials, woodies, and a variety of greenhouse/high tunnel crops as well. Our members have evaluated 156 perennials, 35 woodies, 23 lilies, and a number of calla, cut chrysanthemum, and lisianthus cultivars.

After 25 years of compiling and transcribing data and Trialers' comments to produce the Trial Reports, I have noticed a few things. First, Trialers are a lot chattier than they used to be, and much more expressive. Exclamation points and ALL CAPITAL LETTERS are common now. Contributors have become more eloquent, descriptive, and personal. Thank goodness. Reading hundreds of comments can be a bit daunting, but the verbal flair of our Trialers makes this a pleasure.

I thank my students and staff (Ingram McCall, in particular) for growing, harvesting, and collecting data on each and every one of the 1200+ cultivars tested. Every year they are excited to learn what is coming, but by August (or July in some years) they are ready for a well-targeted hail storm to remove the obnoxiously prolific gomphrena or the smelly marigolds.

This year's Seed Trial Report continues the rich tradition of our Trialers expressing a diversity of opinions. As in the past, this year almost no cultivars were universally loved or hated. As I condensed the comments, I would often run into situations where one Trialer absolutely loved the plant and the next couldn't get it to the compost pile fast enough. Why the differences? Market, climate, weather, soil types, and more. At times the vagaries of customers appear to be the only reason why a cultivar will work for one grower and not the other. I firmly believe cut flower production is one of the trickiest businesses on the planet: it marries the uncertainty of agriculture with the whimsy of consumer and fashion trends.

So, after 25 years, I want to thank the hundreds of growers who, over the years, put in the effort to plant, tend, and collect data on the plants. Thank you also to the seed companies—their support of our industry through the development of new flowers has been critical to our success. The quality of the cultivars has improved greatly over the years due to the time and efforts of many talented breeders.

Thank you to Judy, Linda Twining, and my staff (in the past), who helped organize the Trials and either sent the plant materials out directly or made sure the companies were able to do it. When I used to distribute the hundreds of packets of seeds the breeders had sent me, there were many days of sorting seed packets or flats of plants and compiling "orders" for each of the Trialers, as well as numerous emails (or phone calls in the old days) trying to track down the last plant materials.

And to our readers, thank you for allowing me a few moments to philosophize. Please enjoy this year's Trial Reports. I hope you find your next moneymaker in the words on these pages.

2017 ASCFG Seed Trial Report

John M. Dole,
Ingram F. McCall,
and Judy M. Laushman

Sunflowers are a mainstay of the specialty cut flower industry and a common species in our trials over the years. We evaluated three groundbreaking cultivars this year: 'ProCut White Lite' and 'ProCut White Nite' from NuFlowers, and 'Sunfinity' from Syngenta/Goldsmith.

Trialers couldn't say enough great things about ProCut's 'White Lite' and 'White Nite', including "Incredible! My favorite cultivar in the whole trial!", "LOVE LOVE LOVE the color." and "Customers VERY excited about this variety, asking repeatedly if we are growing this next year." This is not the first year we have had white or near-white cultivars in the trials; 'Jade' comes to mind, for example. However, this is the first time we had near-white flowers on a commercially mainstream plant that flowers quickly from seed, has long and strong stems, and good postharvest life. 'White Nite' has dark brown centers and 'White Lite' has yellow centers. It should be noted for the record that while the cultivar names include the word "white", these flowers are not white. Both have very pale yellow or creamy petals. Only time will tell if breeders are able to produce a sunflower with true white petals.

It is not to say that Trialers didn't report some issues with 'White Lite' and 'White Nite': weak necks, multiple heads on a stem, and more insect damage than on other sunflowers cultivars were most often mentioned. However, on the whole, Trialers and their customers clearly thought 'White Lite' and 'White Nite' were winners.

'Sunfinity' represents a major breakthrough in cut sunflower breeding: a cut-and-come-again sunflower. While we already have branching sunflower cultivars—they produce at most two good harvests—the first is when the main stem is cut, and the second is when the side shoots are harvested. 'Sunfinity' is completely different as the plant structure is more like that of a zinnia, allowing for a long harvest period. However, unlike zinnias, production from 'Sunfinity' tended to cycle on and off. Here at NC State we cut hard, and it would take the plants some time to come into production again. Also, several Trialers mentioned that 'Sunfinity' had "season-long" production, which is what the breeder's literature had also said. It should be noted that here in North Carolina, plants were productive a long time but not season long, and two or three plantings a month apart would provide continuous flowers. Growers in northern or cool areas were able to harvest all summer.

How did 'Sunfinity' perform as a cut flower? Trialers recorded 11 stems per plant, with two participants reporting highs of 25 and 33 stems per plant. The length was much shorter than most sunflowers, averaging 19 inches. However, at least one grower harvested some stems 43 inches long. At NCSU we compared pinched and unpinched production, and found that pinched plants produced 33 stems that averaged 25 inches long, and unpinched plants produced 29 stems that averaged 23 inches.

'Sunfinity' flowers were the classic sunflower color—yellow-orange petals and dark brown centers. Both the overall flower and the centers tend to be smaller than traditional sunflowers. Trialers reported an average vase life of about 8 days, which was close to the nine-day vase life we recorded in our postharvest experiments. At least one noted that some of the flowers were not pollenless, which the company confirmed. They indicated that additional breeding is ongoing and true pollenless cultivars are on the way. Trialers also mentioned that heads were a bit floppy.

In summary, 'Sunfinity' will be a great addition to those who grow sunflowers for bouquets. Southern growers may want to make two or three plantings to ensure stems are continuously available. Unfortunately, the seed is quite expensive, which will limit interest from cut flower growers. The company has indicated that 'Sunfinity' is the first cultivar to be released and subsequent selections are on the way. We hope the seed price will also be better suited to cut flower growers.

'White Nite'

'White Lite'

'Sunfinity'

'ProCut Bicolor DMR'

Besides the three cultivars already discussed, four other commercially available sunflowers were in the Trial, and while not groundbreaking, both 'Vincent's Choice Deep Orange DMR' (Sakata) and 'ProCut Orange Excel' (NuFlowers) scored very well. Both had the classic dark centers and orange petals that many customers tend to prefer.

The two bicolors, 'Helios Flame' (Harris Seed) and 'ProCut Bicolor DMR' (NuFlowers) were very well received. Trialers mentioned they were easy to grow, fast to flower, and relatively problem free. At least two noted that 'Helios Flame' produced a decent second crop after the first harvest. This seemed to happen mainly in cooler climates. However, bicolors are not as popular with customers, which probably lowered the scores.

In addition to the Trial plants, at NCSU we tested five new sunflower selections from Genesis Seed. Unfortunately, they did not have enough seed for the entire Trial program. All five numbered selections, EH16-10, EH16-13, EH16-21, EH16-21L, and EH16-30L performed well, producing one stem per plant, and were easy to grow. Stem length varied from 53.5 inches for the tallest cultivar, EH16-30L, to 30.5 inches for EH16-10. The other three cultivars were intermediate: EH16-13 (34 inches), EH16-21 (44.5 inches), and EH16-21L (43 inches). As reported in the postharvest article, the vase life of the selections ranged from 11 to 15 days on average.

Rich textures are in style; fortunately this year's Trial included a winning plant for adding an extra flair to bouquets and arrangements. 'Mahogany Splendor' hibiscus (*Hibiscus acetosella*) (Harris Seed) is cut for its rich burgundy foliage that resembles lush, large Japanese maple leaves. Plants were very productive, producing an average of 20 stems per plant, which were 25 inches long. At least one grower was able to cut stems up to four feet long, and another was able to harvest up to 100 stems from one plant. 'Mahogany Splendor' likes the heat and grows most vigorously in warm regions, but even cool climate growers were able to harvest stems. However, they generally cut 3 to 20 stems, versus over more than 50 per plant as seen in zones 7 and 8. Not only are plants heat resistant, they're also drought resistant and hardy in Zones 8 and 9, for those who might want to try to overwinter them.

Postharvest life for 'Mahogany Splendor' averaged 9 days, with several growers getting more than two weeks. However, many noted hydration issues. See the comments sections for recommendations for handling 'Mahogany Splendor', most of which say to harvest in the morning or afternoon, and to use a commercial hydration solution. Note that these recommendations match our testing (see postharvest article in this issue), which found that using a commercial hydrator increased vase life to 18 days from 13 to 15 days when a hydrator was not used.

EH16-30L

Marigolds

Marigolds, marigolds, marigolds. This once uncommon cut flower crop has become a mainstay for many ASCFG members. While there were a few comments about the foliage odor, growers seem to have adapted (or resigned themselves) to it. As the odor is most pronounced during harvest and processing, customers seem to either not notice or not mind it. We had five cultivars from AmeriSeed: '888 Deep Gold', 'Falcon Yellow', 'Jedi Orange', 'Oriental Deep Gold', and 'Oriental Gold'. The overall favorite was 'Jedi Orange'; Trialers noted the color ("fabulous pumpkin orange"), large flowers, and long side shoots. Trialers reported harvesting an average of 9 stems per plant, which were around 20 inches long. Actually, all of the marigolds did quite well, yielding a similar number and length of stems. Vase life ranged from 7 to 20 days, and averaged 11 to 12.5 days for all cultivars.

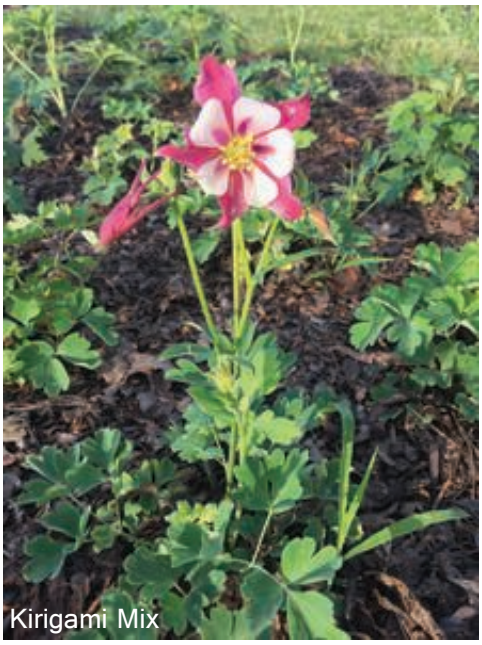
This year Syngenta submitted four first-year flowering perennials: *Aquilegia* Kirigami mix, *Campanula* 'Campbell Blue', *Papaver* Pulchinella mix, and *Penstemon* 'Arabesque Appleblossom'. The campanula and penstemon flowered most reliably, while the columbine and poppy did not bloom for a number of Trialers. The campanula and penstemon scored the highest for their long stems with bell-shaped flowers, which were a nice shade of

purplish blue for the campanula, and white with blush pink edge for the penstemon. The bellflower produced an average of 3 stems per plant, which were about 18 inches long, although at least one grower got 28- to 36-inch stems. The penstemon produced an average of 4 stems/plant that were about 14 inches long. As much as Trialers loved the color of the penstemon, the short vase life of only 3 to 7 days reduced enthusiasm for the cultivar. Growers of the campanula reported a vase life of 5 to 12 days.

All four of the Sweet dianthus entries, 'Magenta Bicolor', 'Pink', 'Pink Deep Maxine', and 'Pink Magic', from Ball/PanAmerican were fairly well matched, producing an average of 6 stems per plant. Stem length tended to be on the short side at 14 to 16 inches, although one grower reported 24- to 30-inch stems. Vase life ranged from 7 to 14 days with a nice average of 10 days. 'Magenta Bicolor' was the favorite color of the four cultivars, although each one had its fans.

Sakata's three lisianthus had unusual colors: Lisianthus 'Rosanne 1 Black Pearl', 'Rosanne 1 Green', and 'Rosanne 2 Deep Brown'. 'Black Pearl' was a rich, deep purple, and 'Deep Brown' was more mauve than anything else. Blessedly, 'Green' was well named for its bright flowers. All produced 2 to 3 stems per plant that were 17 to 18 inches long. As with most lissies, the vase life was a wonderful 13 to 14 days, with some reporting three weeks.

The ASCFG Seed Trial format of distributing seed in the winter for spring planting generally does not lend itself to testing of ornamental cabbages and kale, which need a long cool period to perform best. Having said that, we had two kale cultivars from Harris Seed, 'Crane Feather Queen' and 'Scarlet', and both did quite well with growers across a broad range of climatic zones. 'Crane Feather Queen' is a classic type with green leaves and rosy red heads when the central leaves color up. 'Scarlet', on the other hand, does not form a true head but produces long stems adorned with feathery reddish-purple leaves. 'Crane Feather Queen' was harvested mainly as a single "cut flower", while 'Scarlet' was harvested either as a single stem or as individual leaves, with at least two Trialers reporting harvesting 8 to 22 leaves from each plant. For those harvesting the entire stem, the average length was 24 inches, with several growers getting up to 40-inch stems.


Kirigami Mix

As with all crucifers, the kales attracted a host of insects, including aphids, cabbage loopers and other worms, and harlequin bugs. Many comments were made in the postharvest section about replacing the bucket water periodically for kales. If not, the sulfury compounds released from the decaying foliage will definitely get your attention. Think of kale as "smart" cut flowers—they let you know when their bucket water needs to be replaced!

Many comments were made about replacing the bucket water periodically for kales. If not, the sulfury compounds released from the decaying foliage will definitely get your attention. Think of kale as "smart" cut flowers—they let you know when their bucket water needs to be replaced!

Both delphinium cultivars, Excalibur Mix (Syngenta) and 'Planet Light Pink' (Sakata Seed) were first-year flowering, with Excalibur producing the classic spikes of white, pink, and blue flowers, and 'Planet Light Pink' looser sprays or spikes of pale pink, which found a home as a filler flower. Both are cool-season crops that tended to perform best for a limited number of Trialers in cool climates. A common problem with delphinium is low seed germination, which was noted again this year by a number of participants.

'Crane Feather Queen Red'

Rounding out the Trials were a couple of miscellaneous entries. The soft, pale yellow of cosmos 'Xanthos' (Harris Seed) was certainly well received, but was offset by the short stems, which averaged only 16 inches, although several Trialers harvested 24- to 30-inch stems. Snapdragon 'Maryland Dark Orange' (Ball/PanAmerican) was a hit for its color as well, although there was some discussion as to what the color was. Some noted that it was a dark, clear orange, but one grower said that it had a "pink/magenta tinge to the orange", another called it "almost like deep cantaloupe", and a third described

"more of a bicolor medium orange/medium pink than dark orange". It produced an average of 5 stems per plant that averaged about 20 inches long, with some growers getting up to 10 stems/plant and up to 36-inch stems. It should be noted that one Trialer stated "This was my favorite flower in the Trial"!

Of the thirty named cultivars from two companies, based on the combined ratings score (market appreciation + repeat again + ease of cultivation) the top-ranked cultivars were four sunflowers: 'Vincent's Choice Deep Orange', 'ProCut White Lite', 'ProCut White Nite', and 'ProCut Orange Excel', as well as lisianthus 'Rosanne 2 Deep Brown', and hibiscus 'Mahogany Splendor'. These cultivars will be nominated for the ASCFG Cut Flower of the Year.

Interpreting the trial results: The numbers reported are averages of all the respondents and many factors will affect the success of any plant species. Our participants grow and harvest trial plants using several methods. After looking at the average, check the range of responses listed below each number to see how the cultivar performed at its best and its worst. If the range of responses in the ratings is narrow and high, i.e., 3-5 or 4-5, the plant was a winner for most of the respondents and is likely to do well for you. The 'Repeat Again Rating' is particularly important because it indicates if the Trialer would take the time, money, and space to grow the cultivar again. Review the results carefully. If a variety sounds interesting, but did not appear to do well, try it anyway; it may work well for you.

Acknowledgments: Thank you to each of the 23 evaluators who compiled and returned their data. We appreciate very much the time it takes to participate in the Trial. We especially thank Michelle Elston for being the first to return her evaluations! Thank you to the seed companies for providing the plant materials. We also thank Nathan Jahnke, Ben Bergmann, and Cristian Loyola for assisting with the NCSU Trials. While preparing the report we did a bit of editing of the comments for space and clarity; our apologies if we've altered the tone or content of anyone's comments.

Participating Companies

AmeriSeed
Lompoc, California
www.ameriseed.net

Ball/PanAmerican Seed
West Chicago, Illinois
www.panamseed.com

Genesis Seed
Rehovot, Israel
www.genesisseeds.com

Harris Seeds
Rochester, New York
www.harrisseeds.com

NuFlowers
Woodland, California
www.nuflowersllc.com

Sakata
Morgan Hill, California
www.sakata.com

Syngenta/Goldsmith
Gilroy, California
www.syngentaflowers-us.com

Participating Trialers

Tanis Clifton
Happy Trails Flower Farm
Dennis, Mississippi
Zone 6

Connie Dam-Byl
William Dam Seeds
Dundas, Ontario
Zone 5

Lindsay Daschner
Forget Me Not Farms
Lambertville, Michigan
Zone 4

Dave Delbo
Dave's Flowers
Elysburg, Pennsylvania
Zone 6A

Michelle Elston
Roots
Carlisle, Pennsylvania
Zone 6

Janet Foss
J. Foss Garden Flowers
Onalaska, Washington
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Julio Freitas
The Flower Hat
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Kee-ju Hong-Elder
Hong-Elder Flower Farm
Albuquerque, New Mexico
Zone 7b

Barbara Jewell
Island Meadow Farms
Prince Edward Island
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Zone 5b

Anna Kocon
Little State Flower Company
Portsmouth, Rhode Island
Zone 6b

Barbara Lamborne
Greenstone Fields
Purcellville, Virginia
Zone 7A

Jim Martin
Compost in My Shoe
Charleston, South Carolina
Zone 9A

Ingram McCall/John Dole
North Carolina State
University
Raleigh, North Carolina
Zone 7

Erin McMullen
Rain Drop Farms
Philomath, Oregon
Zone 8

Heidi Motz
Willow Lane Flower Farm
Mirror, Alberta
Zone 3

Denise Peterson
Blue Door Garden
Abingdon, Virginia
Zone 6b

Martha Pineda
Martha's Gardens
Dubuque, Iowa
Zone 5A

Jaime Sammons
Jayflora Designs
Fonda, New York
Zone 5

Rodger Tschanz
University of Guelph
Trial Garden
Guelph, Ontario
Zone 5a

Linda VanApeldoorn
Take Your Pick
Flower Farm
Lansing, New York
Zone 5b

Mechel Wall
Pea Ridge, Arkansas
Zone 7A

Susan Wright
Shady Grove Gardens
and Nursery
Vilas, North Carolina
Zone 6

Summary of Comments. Note that many respondents did not make specific comments on each cultivar and in a few cases, comments have been shortened because of limited space.

***Aquilegia caerulea* Kirigami Mix** (Syngenta/Goldsmith)
Good Qualities: Stunning array of colors (4), light yellow, WOW!; Easier to grow from seed compared to other aquilegia; Some plants bloomed the first year, flowers were up-facing which is nice; Great big flower heads; Easy to germinate.
Problems: Did not flower this season (2); Very short stems (3); Saw no usable stems in first year—perhaps planted too late with the wet, late spring?; Only one plant bloomed, perhaps it needed more vernalization to promote flowering; Only some of the plants bloomed the first year, we had a rainy spring and could not plant out until late May though; Did not take our summer heat very well; Plants were seeded in the spring, no blooms until September which were sparse and surprising, I wasn't expecting them, but the color from the few stems that came up has been amazing, looking forward to next spring for a lush harvest, fingers crossed; Did not germinate for me; Seems like any other columbines; The foliage on this plant was pretty, full but very short, not many flowers and none were marketable because of the length, I'm hoping that they will be taller next year; Would probably be best as fall-planted, as spring-planted, only a few blooms with short stem length.
Similar Cultivars: Other aquilegia hybrids.
Postharvest Recommendations: None provided.
Comments: May have stunted by holding in plug trays too long, foliage grew, but only one plant bloomed, will see if they winter over; I look forward to seeing how this plant does next spring, the colors were lovely, I liked the upfacing flowers, the plants are healthy so hopefully there will be good stems for harvest in the spring; Sorry I had very poor germ results with this variety, I did start another variety of aquilegia the same day and it did well; Some plants are starting to sprout back out now that the temperatures have cooled down some; We planted this in the spring of 2017 when we received the seed, we were able to harvest small amounts of stems, but not enough to market, hoping for more yield information in 2018; 100% germination with cold stratification in January; Terrible germ; It did not tolerate our hot spring this year, few short stems obtained, would recommend fall planting for best performance.

'Campbell Blue'

***Campanula rapunculoides* 'Campbell Blue'** (Syngenta/Goldsmith)
Good Qualities: Nice colour of blue (5); Amazing postharvest life (2); Excellent height in tunnel, blooming early; The daintiness of the bells! I loved this so much more than other campanulas; It seemed healthy, no insect or disease issues, it is still blooming back in our field, it holds well in the cooler, easily germinated; Good filler flower; Loved the size of the bloom, small, plants continued to bloom all season with tall stems that were great for vase work; Interesting, something different; Long stemmed.
Problems: None; The plants were a little weak? could have been a matter of them being in trays too long—late spring this year; I found the blooms did not open evenly and therefore made the stem look like it was past its best, even though it was not; Lots of short stems, doesn't handle weed pressure very well (oops); This plant has been hard for us to grow, I put it outside this year, which was okay, but really only got one stem per plant, with promise of more, but not enough time, the color is not a popular color for us; Blooms were uneven, irregular in maturation, short vase life, slow growth; For a long stem I need the majority of the buds to open and stay turgid, these had blooms starting from the bottom up, not enough open or swollen enough to use, won't grow this again.
Similar Cultivars: None (2); 'Champion Pro'.
Postharvest Recommendations: Floralife extended vase life; #2 Chrysal, keeps well in cooler; Water and chlorine. *NC State conducted vase life testing of this cultivar; see article in this issue for details.*
Comments: I've been growing Champion varieties for several years now, big bell blooms which are nice early in the spring but then as the season moves on, the stems get impossibly short, the bell flower of Champion can also be too hard to work with in mixed bouquets, I liked the small flowers of 'Campbell Blue', delicate little spikes that were a delight to my customers, again, anything blue that grows all season is a hit!; Grew in tunnel, should probably be netted; I am going to try this one again to see if I like it better in a different growing season, they were not irrigated and had a very dry start to the season when they were set out, they are looking happy back there today (October 10); Bad germ; We liked the smaller flowers; None survived transplant; This created beautiful large plants, however, I did not get any flowers this season, fingers crossed they overwinter and I get some beautiful blooms next season!

Cosmos 'Xanthos' (Harris Seeds)
Good Qualities: Unique creamy yellow color (15); Very productive (2); Small dainty flowers; Blooms fast; Foliage is also useful as a filler; Nice; It even had a little tinge of pink sometimes; Popular with florists, many buds per stem allowed for continued vase life of average 5-6 days with a vase life of 4-5 per bloom; Great for fall sales, wholesale customers loved

'Xanthos'

them; I grew this one last year (2016) and was disappointed with the stem length, I had not included this one to try again for this year as I was disappointed with performance, however, in 2017 the result was much different, longer stems allowing for a deep cut and ensuring a supply of stems for several weeks, the colour is a welcome change, we used it in colour-themed arrangements and bouquets, it seemed to perform well and held its own with repeat blooms; Popular with designer; Very cute; Light and airy; Great subtle color well suited to wedding work (especially when the pink centers appear!).

Problems: Too short (13); Thin stems (2); Insect magnet during summer season, powdery mildew in fall succession; Flowers are too small, sets seed too fast, doesn't sell as well as it produces, if it had nice long stems I think it would be great, it gets ahead of us so fast we're always cutting it back; As with most cosmos, spray of blooms has both nice and dead flowers on them, even when harvested frequently, with the cream color, the browned flowers seemed even more pronounced and unattractive; Annoying to harvest, I ended up using it only in low centerpieces for special occasions where buttery yellow was needed, not worth harvesting for market; I'm torn about growing it again next year, nothing compares to it, but the back-breaking harvest may not put it on the grow list for next year; Did not germinate for me; Varied head size, and some inconsistency from plant to plant as far as size, shape and overall vigor; Not as forgiving as other cosmos (especially when left in cells too long), disease issues, fewer viable flowers; Not very productive, even in its short state!; Underwhelmed with its performance; This is a landscape plant; Short season; Needs to be pinched to produce usable stems; Pinching and pinching required to get height.

Similar Cultivars: None (3); 'Lemonade'; Any single-petalled cosmos; Dwarf type cosmos in terms of height and stature.

Postharvest Recommendations: No, it was my first time growing 'Xanthos' and I treated them like any other cosmos and they did fine; Cut when just starting to open into water early morning or evening as for all cosmos; Clean water, pick early in morning, walk-in cooler, Chrysal #2 on hot days; Cutting entire stalk as opposed to single stems helps with hydration.

Comments: These all died in the field; Plants grown in field for summer succession and in hoophouse for fall succession, hoophouse plants are just starting to bloom, still short stems but longer than field, not sure I would grow in field again, Japanese beetles, along with most other insects, really liked them, fall succession in hoophouse has less insect pressure due to the hoophouse nature, (harder to find); We've grown this for two years, in the garden last year, I felt overwhelmed by it and unimpressed by the flower size and stems length, I tried it in the greenhouse this year, it was still too short, and flowers were too small, we don't like to pick anything for less than $8 a bunch, it was a hard sell at that price, we sold a few bunches last year, because it was new; Cosmos is good in cool weather, but isn't great for hot, dry summers; We generally do not grow many cosmos due to their short vase life, so I may be biased against them!; We got these in a bit late, so our numbers are skewed somewhat, great potential for cutting, we'll be trying this one again, for sure; Does it make a difference that we pinched this cultivar? would the side stems or would all stems have been better without pinching?; We will grow this one again for summer bouquets and bucket orders; Lost this early because of too much rain, am going to try again next year with extra spacing; 'Xanthos' is a pain, but worth it, I did find, having some trays that took a long time to plant, that once they were established, I gave the whole plant a "haircut" and it then pushed out more viable stems, whether this helped after being stunted in the trays or would be a general good piece of advice to give them a hard pinch, I'm not certain; A waste of planting space, I was so excited for this color, but at 6-10 inches, there are not many applications for that length! won't waste my time again; We love this cosmos and have grown it for the last two years, but it is getting cut from production for 2018 due to the stem length; Weak seedlings, small overall plant; We planted this in succession and it produced wonderfully; Will be trying this again next year under shade to increase stem length.

Cosmos 'Xanthos' was popular with designers; Very cute; Light and airy; Great subtle color well suited to wedding work (especially when the pink centers appear!).

Delphinium Excalibur Mix
(Syngenta/Goldsmith)

Good Qualities: Beautiful colors (4); Nice that it is a first-year bloomer; Good frost tolerance.

Problems: Low germination (2); Short spikes (2); Delphiniums do not like the soils in our hoophouses! and this variety pretty much gave up the ghost early on and plants were removed, it could have been weed pressure, we did have a problem there for a while, or it could be high pH that we're experiencing (sulfur applied this spring), but for some reason I can't grow them; As with all spring-grown field delphiniums, this was short and unproductive, would try again with fall sowing, also, our customers do not

Excalibur Mix

care for delphinium; I have never been able to successfully grow delphinium, it appears they don't like my soil, I will be interested to see how they overwinter, maybe they will be hardier next season; Targeted by thrips; Deep tones.
Similar Cultivars: Pacific Giant Series.
Postharvest Recommendations: None listed.
Comments: Most likely held in plugs too long, hopefully they survive the winter and bloom nicer next year; I love delphiniums and pride myself on being able to grow larkspur from transplants each year with two solid successions, I'd love to incorporate big bold perennial delphiniums in the garden mix, but for years I have failed each attempt, I've kept three plants from this spring alive (barely) so we'll see if they can overwinter and be productive; We would likely have more stems next season when the plant is fully established; I grow larkspur instead of delphinium. I find it easier to grow and also much more abundant producer; Poor market sales due to dark colors.

Delphinium 'Planet Light Pink'
(Sakata Seed)
Good Qualities: Beautiful pale pink color (9); The stems were very strong and sturdy, beneficial for use in foam and small posy arrangements; The spray form is easy to use in bouquets as a filler; Great form, nice and open, added great airy texture to arrangements; Nice size and shape for weddings.
Problems: Too short (6); Poor germination (2); Stems were short until later in the summer, watch for mildew; Died in our heat; Delphiniums (not larkspur) struggle in our soils, I've never been very successful growing them, and this variety was par for the course, I have managed to keep several plants alive to overwinter in a hoophouse and we'll re-evaluate next spring, the few blooms I got this spring were unimpressive by the time they bloomed, short-stemmed, I had other white, light pink blooms that were nicer to go after; Spring-sown delphinium tends to be very weak when grown outdoors in our climate, which was true for this one as well, we have success only with fall-planted, spring-blooming delphiniums, since it gets hot so quickly in south-central Pennsylvania, also, our customers do not like delphinium in general, so my report is biased; Not vigorous, no rebloom, one cut; The flower is so small that it took many stems to use in bouquets; I have never been able to successfully grow delphinium, it appears they don't like my soil, I will be interested to see how they overwinter, maybe they will be hardier next season; Germination rate was around 75%, stems were harvested in the beginning to promote longer stems, but that didn't happen; Poor stem thickness.
Similar Cultivars: None that we grow; 'Diamonds Blue'.
Postharvest Recommendations: Harvest early in the day, we did not use Hydrator, just #2 Chrysal.
Comments: It was hard to arrange with and not good for bouquets; We loved this for wedding work, with the trending soft pink colors we used it consistently in bouquets, crowns, and corsages, the colour and delicate nature offer desirable additions, also the germination was excellent! as some delphinium can be stubborn these seeds were easy to start, very healthy and vigorous, we do not use irrigation in our annual field and I feel that if they were grown in a hoop or irrigated field the stem length would be much better, we had a dry mid June till mid July which limited stem length, as we received more rain the stems were longer, also they had a long bloom window, and continued to bloom for us for at least 8-9 weeks, very branching but did not require netting, I started some a few weeks later as well, found the first planting produced more stems, the second planting had one nice flush again with proper irrigation, there is potential for succession plantings, I also grew the 'Planet Blue' purchased

'Sweet Magenta Bicolor'

from Ball Seed and had same ease to germinate, the colour of this blue I would describe as brilliant—recommend both; Would definitely grow this one again; Nice different delphinium; My florists prefer *Delphinium cultorum* to these; I grow larkspur instead of delphinium, I find it easier to grow and also much more abundant producer.

Dianthus 'Sweet Magenta Bicolor'
(Ball/PanAmerican)
Good Qualities: Vibrant, rich bicolour (14); Sturdy stems (3); Excellent vase life (2); Excellent germination (2); One of my favorites of the Sweet series (2); Customers love the look of dianthus, hardy; No insect issues, reacted well to a mid-June sowing as well as an earlier one; Long-lasting in the field; Out of all the dianthus trials, this one was the most usable—the color was deeper and richer and worked well with many other crops in mixed bouquets, sold well at farmers' market, again not marketable to my florist clients, though; The bicolor was very popular with customers, everyone wanted them; Same as the other Sweets, succession plantings work well; Beautiful round heads, uniform plant habit and bloom time; Full heads; A little taller than 'Sweet Pink'.
Problems: Too short (3); Not usable for market; Some botrytis later in the season especially with rainy, damp weather and heavy morning dew, as we do not irrigate we found the stem length was short early in the season, with rainfall it did improve, typical of sweet William, removing lower leaves is time-consuming as each one is removed individually, the stems will often snap during this process; Brittle stems, stems were the shortest of all cultivars of dianthus that we trialed; Too hot of a color; All Sweet series is too short to field grow in our climate, would consider trying this color again in the greenhouse, planted in February to beat our hot late springs, produced many stems, but they were all too short and small to use; Doesn't like our heat; Flowered from spring seeding, but stems were short, fall-seeded a second succession to overwinter, plants to be grown in both hoop and field conditions, earlier blooms with longer stems expected; Too pink, poor retail reception, rain damage, not for weddings; Deer seemed to enjoy it, they nibbled early in the season, so I only got the stems from a second growth; Thinner stems; None; Not as many useful second cuts; Stem length is too short for anything but bridal work.
Similar Cultivars: No; Dianthus Neon series (2), similar colors but much taller; Any Sweet.
Postharvest Recommendations: Cut in early morning into water, we did not strip in field as it was too time-consuming and we have limited time to get the day's harvest, they were stripped later in the barn, placed in Chrysal #2, cut when half to two-thirds of florets are opened, also I found from the second sowing these flowers were not put in the cooler after harvest as it was cool in our barn, I took into the house some that had only a tiny bit of colour, perhaps 2 florets open, and I was pleasantly surprised they opened fully, vase life two weeks; Clean water, walk-in cooler; Used plain water. *NC State conducted vase life testing of this cultivar; see article in this issue for details.*
Comments: Too short (3); Neon series is much taller compared to this Sweet series (2); We found the Sweet series a helpful flower to have for excellent vase life and a wide range of colours, this variety as with the others in the series responded well to the late-season sowing June 13 into seedling channel trays, they were later planted to 50 cell and then through bi plastic 10 inches apart, they started blooming the later part of September and bloomed through until our first heavy frost in October, no insect or disease issues with the second sowing; All of the Sweet series were small headed and no impressive colors; Out of all the dianthus trials this year this one was the best, but still not amazing, we are not growing any of the dianthus trials again; Would consider trying this color again in the greenhouse, planted in February to beat our hot late springs, produced many stems, but they were all too short and small to use; Will definitely grow again!; Must be grown under cover for harvestable stems; I prefer the Amazon series for sweet William, much larger flower heads on the Amazon, I will be interested to see how the Sweet series overwinters; Loved it; Crop just about to bloom now in hoophouse is definitely taller than the field-grown, later stems were real skinny with small heads; In general, not a great year for dianthus, with lots of rain, blooming dianthus rendered unusable with water staining, etc.

Compared to the other dianthus varieties we trialed, 'Sweet Pink' was my favorite color. Soft pink is a great shade for blending in bouquets, we used this colour the most in our arrangements; Very easy to grow, takes neglect, did very well during our abnormally hot, dry summer, even with minimal irrigation.
ON THE OTHER HAND
'Sweet Pink': Very thin stems; Very ugly bubble gum pink; Stem length is too short for anything but bridal work; Too short; Pink was a bit washed out; Produced many stems, but they were all too short and small to use; Don't like our heat.

'Sweet Pink'

Dianthus 'Sweet Pink'
(Ball/PanAmerican)
Good Qualities: Very pretty color (6); Long vase life (5); Good germination (3); Sturdy (2); Same as the other Sweets, succession plantings work well; Soft pink is a great shade for blending in bouquets, we used this colour the most in our arrangements; Very easy to grow, takes neglect, did very well during our abnormally hot, dry summer, even with minimal irrigation; Compared to the other dianthus varieties we trialed, this was my favorite color; Lots of stems, this one was really prolific, color was varied and held well in the field; Great heads; Easy to grow; This pink is unique in the dianthus I have grown, I just wish the stem length was longer; No insect issues, we sowed this twice to see how it would be for a late season (October) cut, although it did not have quite as many stems as the main crop sown in April it showed great promise as a fall crop, a long bloom period making it useful for small bouquets and would be a recommended crop for you-pick.
Problems: Too short (8); Pink was a bit washed out (2); Produced many stems, but they were all too short and small to use; Don't like our heat; Too pink, poor reception, rain damage; Stems were hard to use, not tall enough for market bouquets, would use only in low arrangements; Deer seemed to enjoy it, they nibbled early in the season, so I got stems only from a second growth; Did not move in wholesale at all, was a hard sell in farmers' market, but were able to move it through market and grocery sales; Very thin stems; Very ugly bubble gum pink; Easy to grow, not many issues; Stem length is too short for anything but bridal work; The stems took some time to get some length, with irrigation or adequate rainfall I'm sure results would be better, the shorter side stems tended to be weaker, as with most dianthus stripping stems can be time-consuming,
Similar Cultivars: 'Sweet Deep Maxine' (2), but 'Pink Deep Maxine' had a better, clearer, deeper pink color; Any Sweet series dianthus; 'Pink Magic'.
Postharvest Recommendations: Used plain water (2); Walk-in cooler; Cut before mature, 2/3 of florets open, rest will open in vase, strip carefully, if too fast stems tend to snap, keep harvested to encourage blooms.
Comments: Best suited to high tunnel production very early spring in Mid-Atlantic climate; Have planted a succession to overwinter to determine if light pink color works better in early spring rather early summer blooms, hopefully they'll have longer stems; Must be grown under cover for harvestable stems, wish it were a light pink; Comment on the whole Sweet series: this is a uniform series in height, shape, and bloom time, perfect for production cutting, it doesn't really rebloom, so growers should plan for that, but the consistency makes it worthwhile, we have grown it in drought years as well as this season (of rain and cool nights) which was ideal for dianthus, and have found it to perform equally well, recommended!; I prefer the Amazon series for sweet William, much larger flower heads on the Amazon, I will be interested to see how the Sweet series overwinters; Have a crop just now about to bloom in hoophouse, definitely taller than field grown; Good color, very sturdy cut; When you have experienced the Amazon series, most others have a hard act to follow, all of the Sweet series were short, small-headed and pastel, no impressive colors, they may have done better if planted in the fall, I may do a tiny patch to see this fall...nah, they still weren't pretty enough colors to waste space on another trial, sorry; This is just not a marketable crop for my region—no one will pay for dianthus and they certainly do not want bubble gum pink so it was not a good one for us; The Sweet series is a staple for us. We grow the white and mix every year, the added colours certainly are a plus, we direct seeded into 50 cell plugs, transplanted to 9-inch centres to biodegradable plastic with no irrigation, began harvesting July 16 from an April 1 sowing, harvest period was 5 weeks for us, as we leave all our plants in till next spring before tilling there were still short side stems, this would make a good home garden plant as well, I was hoping for a softer pink colour, I honestly found this shade a bit ordinary, not bright enough to add spark and not soft enough to be helpful in modern wedding arrangements.

Dianthus 'Sweet Pink Deep Maxine'
(Ball/PanAmerican)
Good Qualities: Really nice deep, clear pink color (7); Tallest of the colors (2); Sturdy (2), same as the other Sweets; Held well in the field; Long vase life, edible flower, lots of usable stems; Height; Liked this colour better than the 'Pink', it seemed to be more vibrant whereas the pink was a bit dull, had the pink variety been a few shades softer in colour I think it would have been more useful, it was healthy and had good vase life, we will grow again; Very easy to grow, takes neglect, did very well during our abnormally hot, dry summer, even with minimal irrigation; Tall thick stems, nice heads; Consistent just like the rest of the Sweet series; Long vase life.
Problems: Too short (4); No demand for this in our markets, used mostly in market and grocery bouquets; Terrible color, impossible for me to market, too hot; Not as many good second cuts; Would consider trying this color again in the greenhouse, planted in February to beat our hot, late springs, produced many stems, but they were all too short and small to use; Don't like our heat; Too bright; There are other cultivars with better color; I found the color to be a bit odd, was difficult to work

with in bouquets, deer seemed to enjoy it, they nibbled early in the season, so I got only the stems from a second growth; None.
Similar Cultivars: 'Sweet Pink' (3); Any other Sweet series dianthus; 'Deep Pink Maxine' has deeper, clearer pink color with no white; 'Sweet Pink Magic'.
Postharvest Recommendations: Clean water, walk-in cooler; Cut into water early morning, strip leaves carefully not to break stems; Used plain water. *NC State conducted vase life testing of this cultivar; see article in this issue for details.*
Comments: Not really marketable in my region; Better suited to high tunnel production very early spring in Mid-Atlantic climate; The Sweet series is very useful for us offering good variety of colours, easily germinated and grown, no pinching or spraying, excellent vase life and can have two plantings in our season, field grown from transplants, recommend this one, the only improvement would be a stronger stem and easier to clean stems! despite this we will be growing again, it is a very useful series; Must be grown under cover for harvestable stems; Jazzy snazzy color; I prefer the Amazon series for sweet William, much larger flower heads on the Amazon, I will be interested to see how the Sweet series overwinters.

Dianthus 'Sweet Pink Magic'
(Ball/PanAmerican)
Good Qualities: Vibrant color (7), best pink Sweet of the trial; Easy to grow (3); Long lasting (3); Prolific (2); Sturdy stems (2); Edible flower; None; Like the colors; Nice uniform habit, few cultural issues; Visitors to our trials commented on the fun range of colours in each bloom, consistent uniformity of height and bloom size from plant to plant; Takes neglect, did very well during our abnormally hot, dry summer, even with minimal irrigation; Florists liked this pink better, strong stems, although later flowers were skinny; Consistent; Our favorite in the series other than white, which is amazing, the combination of colours made for interesting bouquets.
Problems: Too short (5); Stems were somewhat brittle, just not a lot of demand in our markets; Terrible color, impossible for me to market in my region, way too bubble gum pink; A hard-to-use "tie-dyed" color of white and pink on same stem, did not stand out in a bouquet, looked washed out, all Sweet series is too short to field grow in our climate, produced many stems, but they were all too short and small to use: Don't like our heat; Bloomed late; People think it's either phlox or over the hill; Not marketable; Deer seemed to enjoy it, they nibbled early in the season, so I got only the stems from a second growth; Mostly white/washed-out pink, thin stems; None; Least popular color of varieties for sales; Nothing that impressive with this pink color, the stems were too short for anything but small arrangements and wedding bouquets; Same as typical dianthus, stripping stems and stem strength, the longer the stem the more likely it would be to snap, would love to know if there might be a recommended amendment to strengthen stem, not just this variety but all sweet William in general.

Dianthus at William Dam Seeds

Similar Cultivars: 'Amazon Rose Magic' (2); Any other Sweet series dianthus.
Postharvest Recommendations: Clean water (2), walk-in cooler; Cut early morning, take care in stripping to not break stems stored in #2 Chrysal, we did not use hydration on this variety. *NC State conducted vase life testing of this cultivar; see article in this issue for details.*
Comments: Just a terrible color; Sweet dianthus is better suited to high tunnel production in our Mid-Atlantic climate; Colors fade in postharvest; Seeded for overwinter growth in hopes of getting longer stems; Easy; I prefer the Amazon series for sweet William, much larger flower heads on the Amazon, I will be interested to see how the Sweet series overwinters; When you have experienced the Amazon series, most others have a hard act to follow, all of the Sweet series were short, small headed and pastel—no impressive colors; Our fave in the series, very useful and we will certainly be growing again, there was a time during July when I felt the stem length was not going to be good and the 'Magenta' seemed to be tallest by at least 2 inches for about 10 days, then they seemed to gain momentum and gained some more height, keeping the stems harvested prolongs the production. It also responded well to the mid-June sowing, the first sowing in channel trays April 14, we began harvesting July 18.

Hibiscus 'Mahogany Splendor'
(Harris Seeds)
Good Qualities: Gorgeous color of leaves (16); Awesome texture (9); Productive (6); Long usable stems (4); Season-long production (2); Looks like maple leaves (2); Great for centerpieces or anything where it is directly in water; This cultivar was very popular with my customers at market, and with brides; Never saw a bloom, but I hear they're beautiful, cut and regrowth was strong providing a lot of stems per plant; Autumn-leaf look with better hydration qualities than Japanese maple, can cut multiple sections per stem; Shape, few insects; Florists loved it, I loved it in my designs! nothing quite like it, mine didn't get really tall, so we'll start them under low tunnels next year to get them going and definitely net them; It branches out when cut to make more, shorter stems for later harvest, can take cooler temperatures to be a fall filler, perfect for bringing the burgundy colour to a fall arrangement; I can't say enough good things about this plant, it's a great substitute for ninebark, which the deer decimate in my area, great filler, looks fantastic in arrangements especially in the fall, I had no problem with pests or diseases on any of the plants, grew some in containers and some in the ground, all did fantastic!!; Customers love it, cool tropical look, not common in our temperate region; This plant seemed very easy to germinate and grow, I had a couple of pots in our greenhouse as well as the field, they both grew approximately the same height, more than five feet, in the field where it was sheltered by a windbreak of broomcorn, it was netted early but soon grew past the netting, I do not think it would need support as it is a strong plant, the colour was pleasing and offered a welcome contrast, this plant has great vigour and kept growing after cutting, I found this to be a useful plant and will grow again next season; The plants performed amazingly well but in our heat this plant is a winner; Long lasting; Especially ideal for autumnal palettes. Unique leaf shape, easy to incorporate into arrangements; Came into season JUST when my clients were looking for interesting dark foliage (late summer, fall).

I can't say enough good things about this 'Mahogany Splendor'; it's a great substitute for ninebark, which the deer decimate in my area, great filler, looks fantastic in arrangements especially in the fall, I had no problem with pests or diseases on any of the plants, grew some in container and some in the ground, all did fantastic!

'Mahogany Splendor'

Problems: Can wilt easy (5); None (3); Doesn't hold well out of water (2); Some issues with hydration early on—have to wait until stem becomes semi-woody (2); We planted this seed too early, it germinated, and then it was so cold and dark and rainy it just sat there refusing to grow, finally were planted in a high tunnel in July, they are growing there although we are back to cold, rainy weather, there are about 3 marketable stems per plant, but we haven't harvested them yet; lasts about a week before it starts to wilt compared to other foliages that last more than 3 weeks; Once in a while I would get wilt at just the top of the stem; Germination was not great for us, I'd say about 50%, also not cold tolerant, we covered them on the first frost and they did okay, but lost them when they were left uncovered when temps reached 35F; Japanese beetles love to eat it, in our temperate region it took a long time for these to establish and take off, we got only about 3-4 weeks of cutting off of them before frost took them; Hydration issues—lower leaves need to be cut instead of shucked; It is cold sensitive; Some bug damage towards end of season; Conditioning is a problem; Takes a while to establish, definitely one to start early.
Similar Cultivars: None (4); 'Haight Ashbury' is a more frilled variety; Ninebark; Japanese maple leaves.
Postharvest Recommendations: Cut early in the morning right into clean water, hydrate before storing in cooler; I used Quick Dip on this, needed to cut when it was cool; Used Floralife in harvest water, cooler to condition for two days; All stems rooted in the vase, so nothing special needed; Water with chlorine; We noticed right away that stems would wilt after harvest, so we moved to harvesting in early morning as much as we could, sometimes late morning, we placed stems immediately in hydrating solution (Chrysal Rose Pro) and cooler for a few hours and stems held up fine after that, we also noticed that the older the plants got through the summer the less wilting occurred; It will wilt if not kept in water; Used plain water; Had mixed reviews from customers and experienced differing results in our own vase trials, but haven't come up with a good answer ourselves; Requires Quick Dip and hydrator to prevent meltdown;

Wait until mature before harvesting, cut early morning or evening directly into water, did not keep well in the cooler, the colour lightened considerably, I would not recommend long-term storage in cooler; There could be wilt issues with this plant in high heat, I did not use or recommend in bouquets, but it held up tolerably well as long as in water and not super hot, cutting first thing and a solid time in cooler helps; I always cut these first thing in the morning, even with dew on them, making sure they are hydrated, then place a fan on them to dry in an air-conditioned room, plain water, no cooler, air-conditioned room, if storing change out the water and bucket and recut every 5 days with wilting still occurring on a small percentage of stems over a long period of storing, they do not hold up well in extreme heat of the farmers' market and if left in the cooler more than a day or two; MUST be put immediately into water, they wilt a little but come back after holding in a cooler, they root in water, if they are out of water, they wilt quickly; Quick Dip immediately after cutting; Quick Dip, early morning, also wait for the plant to mature—I waited about two weeks after I thought it was ready. *NC State conducted vase life testing of this cultivar; see article in this issue for details.*

Comments: I love it (2) and will grow forever; I think this is a great plant for some growers, it's good nice annual foliage, while we haven't tried postharvest on it yet, I've heard it can be difficult; Long-lasting, actually rooting and growing in water after cut, some florists stated that it does not like a cooler; This was the workhorse of the farm this fall, so happy to have this plant!; Would have liked more information about growing, waited for flowers for a while but then just started using the stems as colorful leaves, stems required floral foam in arbor arrangements, did better in bouquets in water than bridal bouquets where stems were out of water for a time; A great autumn filler/foliage!; Excellent germination with soaked seeds, unreliable foliage; I'm sorry I didn't keep track of the stem yield for this variety! if I had to guess I'd say at 10-12 stems per plant; We had sold this for years as a background plant and never considered it for cutting, thanks for including it in the Trial and giving it a whole new purpose!; I can't say enough good things about this plant, I LOVE it!; We will be growing these again, starting them earlier, and possibly trying for some season extension in a hoop, our harvest data are a little short, because we didn't get a full harvest out of them, there was still lots of nice growth and cuttable stems when frost hit; This was a good plant, a welcome change to add the dark foliage to bouquet work, as the season progressed the stems seemed to last much longer, up to 2+ weeks, it would be a good plant to have especially for autumn arrangements, to take full advantage of the potential would recommend to try in a tunnel as the early frost would harm it considerably, it was difficult to determine the number of stems as we used them for various-sized arrangements; Would highly recommend; We use these as a filler in grocery bouquets, wholesale straight bunches, and in our farmers' market bouquets, they really help fill up bouquets, especially when you are short on flowers, I cut some late into the fall and kept in a vase inside our home and they had the most beautiful deep, deep burgundy hibiscus blooms (for only a day, though); Favorite plant of the Trial; Definitely a mainstay crop for us, will be expanding production next year.

'Crane Queen Feather'

Kale 'Crane Feather Queen'
(Harris Seeds)

Good Qualities: Beautiful feather form (7); Sturdy/strong stems (3); Long vase life (2); Color (2); Good germination (2); Love this variety of kale and will continue to grow—nice long, tall stems that did not flop over without staking; Looked great in all my fall work; Unique shape and colour; Even though most of the pictures I'd seen showed more of the purple color coming through, mine was definitely more on the green/white shades, with a purple center, 99% germination, upright stems that were easy to work with, it would look great in a mixed bouquet and customers thought they were fun, but no one bought it! I'd grow it again to include in a mixed bouquet; Color is really nice, our customers loved it, they sold first over traditional leaf-flowering kale; Nice change from traditional Crane cabbages, could potentially be used as a filler for fall bouquets—seemed to be wider and bigger than cabbages on stems—would try wider spacing to do this, we currently space at 4 inches for cabbages (2/1 pattern in hortonova), white is especially pretty; Huge heads, awesome stem length, holds after frost; Loved this variety just as much as 'Feather King White', hardy, stems that did not flop over, we used no netting or stalking, will definitely grow again; Nice size for bouquet work; Good filler in a bouquet, responds well to succession planting, easily grown; Best cut flower kale I know of, second year we've grown it, best seller.

Problems: Bugs love it, especially aphids and worms (8); must be watched daily for insects, which is a problem we have with all kales (2); Would like to find a way to get smaller heads, I planted them pretty close together in hopes they would be smaller but no luck, a variety that didn't get as thick of a stalk would be ideal; Single stems, limited uses; Did not make it to maturity, was eaten to the ground before it was even a few inches tall; Needs staking to keep the stems straight and one stem per plant; Needs netting; Long-season brassicas are tough to grow due to harlequin infestations, hand-picking and spraying Bronner's peppermint soap wasn't enough, plants were hit so hard that they died, we just couldn't keep up, HOWEVER, since these plants acted like a trap crop, our Tuscany kale (for eating) rebounded beautifully, if we were to grow again, we'd have to figure out how to cover the plants for the season, build a screen house to keep them safe and sound, hand-picking harlequins is insane! I filled quarts of soapy water with the little buggers! PyGanic had little effect; We are wrapping up the season by the time this comes into production, we need to move into field clean up, etc. and our farmers' markets are over, so we do not have a good market for them; Too thick of stems, would be more usable if stems were smaller; I really didn't like this variety compared to the rest, most of them didn't "flower" but instead made undesirable cabbage head, all of the stems flopped over, they were planted close with no netting like the rest but this was the only variety that fell over, maybe due to the large balls of cabbage heads forming on the top; Plant at very close spacing to avoid large stems.
Similar Cultivars: 'Crane'; Any other flowering cabbage.
Postharvest Recommendations: Water with chlorine; Water got really stinky! Ah hah, we changed the water every 2-3 days, vase life of 9 days, until the lower levels of the rosette started turning; Frequent water changes helped minimize that "cabbage" smell; Clean water, pick day before selling due to cabbage smell if held too long; Cut into water, do not overfill buckets as it will bruise the bloom.
Comments: Did not color up (2); I just loved working with this, didn't have to worry about wilting, just kept going and going; I didn't sell this one by the stem, but I also didn't use it for my CSA, I didn't plant enough, I just grew it for the Trial; Did not sell any; In cool season fall outdoor arrangements these can last for several weeks, because we did not stake and the plants blew over, we got multiple shorter stems, which was not a bad thing!; Love these and will grow more!; Requires weekly spraying of Bt for cabbage moth; We really love this crop, I will grow again next season and try to market it better; I planted this variety three times, the first which I would not do again, was too large and was not something we needed in our earlier bouquets, by planting later mid-June and again in late July it helps to avoid the cabbage moth as well they did not get all large, next year I will experiment with direct seeding, I found the late sowing this year to be the easiest, I did not net, nor add fertilizer other than compost application in June, no irrigation, no chemicals of any type were applied, the last planting was definitely most beneficial to us, we did not need to net or strip stems prior to harvest, insect damage much less, stem size much smaller which is more desirable in a mixed bouquet; I love this kale for fall, we tried an early spring harvest time but customers were not receptive, best for fall.

'Rosanne 1 Black Pearl'

We loved 'Scarlet' kale. I did not market it well enough and the timing was off for the time of year but I think it can be marketed better—it really is a gorgeous crop.

Kale 'Scarlet' (Harris Seeds)
Good Qualities: Beautiful rich purple color (8); Hardy (3), lives beyond first frost; Beautiful, full stem, used whole plant as filler for bouquets, and it was lovely! will definitely grow this one again, no netting required since it's not as top-heavy as most cut flower cabbages and kales; Nice foliage, lasts all season long; Even though I think this would be a great filler for bouquets, I'd grow them again to sell to interior designers, we treated as a one-and-done crop, but the tall full stems yielded about $5/stem, it didn't really get traction with florists like I thought they would in the fall, we cut them low, almost to the base, maybe 5 inches off the ground, side shoots came up after a while, just didn't have time to see how long they would get, so I'm interested in trying next year and "pinching" them to see what comes up; Nice leaf shape, beautiful in fall arrangements; Used as a foliage, it was a great texture and color added to edible arrangements, will grow again, conversation starter for sure, using it for Thanksgiving arrangements; Texture,

height; Easy germination; Plant leaves were so big that was hard to use; Love that it looks like a palm tree; I cut from the bottom and got tons of leaves to use in arrangements, as the season wore on some of the plants in a protected cool area grew huge and produced leaves large enough for me to use in bouquet work!
Problems: High insect pressure (5); We harvested mid-July, it had a bit too much of a fall feel for that time of year, we will definitely grow again, but plant July for September harvest, needed to spray with Bt several times; Single stems, limited uses; We did have some aphids on these, but not as bad as in the Crane cultivar; Did not make it to maturity, was eaten to the ground before it was even a few inches tall; Stems are somewhat large, limiting what they can be used for, some customers were unsure of how to use them; I found this grew too large from an early planting, the stem was too thick and needs to be sown much closer together aiming for a later harvest window; It is a heavy look for my wedding clients, but we used it in several weddings and loved it, I will grow again and market it better; It is kale, so the stem length is short, I use it in edible bouquet work; Great landscape plant.
Similar Cultivars: 'Redbor' (3).
Postharvest Recommendations: Water with chlorine; Even though I harvested some leaves off of each plant, I treated this as a one-and-done, cut at the base and sold them to interior designers for their home shoots, they loved the tall stems, the color and the interesting foliage; Morning Harvest helped with hydration issues; Clean water, clean buckets, harvest day before selling.
Comments: Leaf length: 13-17 inches, leaf width: 5-6 inches; Too hot here, did not color up; We spaced at 10-12 inches, I think it could be grown even tighter, also worth succession planting for extended fall harvest, could even be grown in the high tunnel like cabbages on stems; I didn't sell this one by the stem, but I also didn't use it for my CSA, I didn't plant enough, I grew it just for the trial; Did not sell any, but could use individual leaves; This was a fun addition to the farm, we're still enjoying using them and plan to keep cutting on them for Thanksgiving and holiday arrangements; Required weekly spraying of Bt to prevent excessive insect damage; Groundhog ate most of them, not coloring up yet at the end of October; I think in order to best use this plant for bouquet work for I would succession sow/direct seed to keep the stems smaller and plant shorter, it would be more useful for a late summer/fall item, I would never sow it again early as it was just too large, the colour was wonderful and I look forward to trying it again 2018; If I were to try again, I would plant it a lot tighter to try to get smaller plants, also need to find out if I was doing something wrong that I didn't get longer vase life; We loved it, I did not market it well enough and the timing was off for the time of year but I think it can be marketed better—it really is a gorgeous crop; I LOVED this plant and used the heck out of it, it grew and grew, heads were perfect for bases and I even used them in pumpkin arrangements that were gorgeous, this was a workhorse plant and I will keep it as a staple.

Lisianthus 'Rosanne 1 Black Pearl'
(Sakata Seed)
Good Qualities: Awesome dusty purple, antique shade (6), very much in keeping with moody, tonal bouquets that are popular this season, first cut is a very nice full spray with many buds, nice smaller head for lissies; Great for wedding work; Strong stems; Good form, long lasting, good $ per stem; Firm petals; Full bloom.
Problems: Second flush was not as tall as some lissies, seemed more attractive to thrips than some other varieties; Shorter than other lissies; Color didn't have a lot of appeal to customers, some thought they "looked dead", it was a hit or miss; Poor germination, limited uses; Harvest window is feast or famine, customers who loved the variety were disappointed to have it for only 3-4 weeks, color is somewhat restrictive to certain designers; Shows thrips damage easily; Seems to show the slightest water damage, became mostly useless for my florists but sold fairly well at market, and went into a lot of mixed bouquets; The tinges of white streaks made it look like it was dying.

'Rosanne 1 Green'

Similar Cultivars: 'Rosanne Dark Brown', it looks exactly the same petal-wise and plant shape but much darker in palette.
Postharvest Recommendations: Swap out with clean water and disinfected buckets every 3-4 days. *NC State conducted vase life testing of this cultivar; see article in this issue for details.*
Comments: Love this one!; Interesting color, we had some lavender flowers as well; Weaker than the others; We sold most of this through wholesale, and cut larger central stems as one stem, instead of cutting side shoots, subsequent cuts utilized side stems, Low germ; 18-30 buds per stem; Not growing again, water damage, and it almost looked like the petals were all burned on the edges.

Lisianthus 'Rosanne 1 Green'
(Sakata Seed)
Good Qualities: Awesome bright green color (6); Pairs well with many other colors; Nicely-shaped buds and flowers, re-flushed for us in the field; Sturdy stems; Very firm petals, long vase life; Nice smaller size that worked well for wedding work.

'Rosanne 2 Deep Brown'

Problems: Short stems (2); Fair germination, weak seedlings, small blooms; Slightly weaker stems than the other cultivars in this series, rain damage was apparent in the field; Wish it had more petals, needs better presentation; Not marketable in bulk to florists, sold well at farmers' market and in mixed bouquets; Not as productive as other lissies, including other Roseanne series, not as tall as other Rosannes, green color didn't seem to be popular with our brides this season (however, we'll definitely grow again and hope for a different color trend!).
Similar Cultivars: 'Mariachi Lime', but Rosanne is smaller; Other Rosanne series, nice firm petals.
Postharvest Recommendations: Clean bucket and water every 3-4 days, holds very well in walk-in cooler. *NC State conducted vase life testing of this cultivar; see article in this issue for detail, s.*
Comments: Solid seller in our wholesale markets, amazing vase life; Need to plant earlier to get better stem length; 1-25 buds stem; Low germ; The color is amazing and fun to grow, but my clientele are very classic wedding folks for New England, they mostly need softer, richer greens, not so hot.

Lisianthus 'Rosanne 2 Deep Brown' (Sakata Seed)
Good Qualities: Gorgeous color, like a dusty deep plum (6); Sturdy stems (2); Very usable, surprisingly popular; Long life; Sold very well in wholesale; Firm petals, long stems, lots of side branching, endless uses and both florists and farmers' market folks bought it all up; Worked great with burgundy/grey color scheme that we saw this season, great, tight and full flower cluster, nice, smaller flowers that were good for wedding work, excellent!
Problems: None (2); Weak seedlings; Wish it had more petals for more impactful presentation; Lower germination than other lisianthus that we grew this year; Shows thrips damage easily, florists not impressed with the color; The name! it is a mauve color, not deep brown, hard to teach florists and event designers what it is—they LOVE the color but the name is not intuitive; in general, all lisianthus this year had fusarium wilt, but the Rosanne series did better than other types.

'Rosanne Deep Brown's' name is a problem! It is a mauve color, not deep brown, hard to teach florists and event designers what it is—they LOVE the color but the name is not intuitive.

Similar Cultivars: Rosanne series.
Postharvest Recommendations: Clean bucket and water every 3-4 days in walk -in cooler. *NC State conducted vase life testing of this cultivar; see article in this issue for details.*
Comments: Interesting color; Doesn't show insect damage like some colors, great wedding color; Low germ; 2-27 buds/stem; I love this and will grow it forever, the dusty, muted deep plum was just the neutral color that blended well with so many designs, we loved it; As a staff, we preferred the 'Black Pearl', but found that this one ('Deep Brown') actually coordinated better with both summer pinks/whites and fall burgundy/grey/plum, designers started ordering more of this one and less of 'Black Pearl' as well.

Marigold '888 Deep Gold' (AmeriSeed)
Good Qualities: Nice color, closest to orange (7); Incredible stem length, the tallest of all cultivars (4); Long-lasting (2); Produces a lot of stems when pinched; Very healthy, good germination, very vigorous! nice blooms very full and ruffled, lots of great branching stems especially those we had pinched at 10 weeks, if you were looking for height, 4.5-4.9 feet, with no irrigation, the blooms were wonderful, large, ruffled, and bright in colour; Pale orange color complemented 'Jedi Orange'; Bright and big-headed blooms filled out a bouquet nicely; Beautiful double form; Sturdy stems, impressive head size; Fills out bouquets; Nice-sized head.
Problems: Very strong fragrance when cutting and processing the flowers; We lost many stems of this plant because they snapped/bent so easily, probably wouldn't grow again; Thin stems; Not as many stems as 'Oriental Deep Gold'; not as productive, since we consider the 15-18 inch stem length of 'Oriental Deep Gold' as sufficient, I would not waste space on a less productive variety, flower heads are also smaller than 'Oriental Dark Gold'; It had the typical soft neck, and the upper stem was weaker and bent over easily after harvesting, the strongly-scented foliage was a definite turnoff for employees, especially as the plants matured, it was strong, we found this with ALL the marigolds in the Trial, in August, it was not as prevalent as in mid to late September, even I found it strong! the scent seemed to cling to clothing and hands; Customers do not like the way they smell; Required a deep pinch to encourage side shoots to be long; Lower branches make support challenging; Was not as productive as the others in the trial.
Similar Cultivars: 'Oriental Deep Gold' (4); 'Oriental Gold' (3); I find all the cut flower type marigolds to be very similar.
Postharvest Recommendations: We treated all marigold cultivars the same, sometimes we harvested early in the morning

and sometimes we just had to harvest in the heat of afternoon, I didn't notice a difference in vase life, and they were all treated the same postharvest, they were put straight into Chrysal #2 for cooler and moved to #3 for vase life testing out of the cooler; Plain water worked great; Do not overcrowd buckets, the necks break/bend easily, handle with extra care to prevent damage; Water with chlorine; stripping 90% of all foliage, foliage does not look good after going into cooler, Chrysal Pro 2 and gerbera tablet. *NC State conducted vase life testing of this cultivar; see article in this issue for details.*

Comments: I never know how to treat marigolds—should they be pinched or not, if so, when is the best time/place to pinch? I have not pinched in the past, the plant gets very shrubby after harvesting the first few stems; Cannot sell marigolds; A very good performer, however, if I had to choose, I'd choose 'Oriental Deep Gold' for my gold marigold; Japanese beetles were a real problem with the marigolds; This was a very tall robust plant and we found it healthy and required lots of space, I feel we would not need a plant quite as vigorous as this one in our limited marigold market, for anyone who is fortunate enough to sell marigold stems it would be a variety I would recommend to try, I would definitely give a good pinch at 10-12 weeks, it would make an impressive landscape specimen; Varieties were trialed in field, greenhouse, and hoophouse conditions, field plants produced smaller heads, shorter stems and were targets of insect damage much earlier and heavier than plants under plastic (hoop and greenhouse), heat and dry conditions didn't seem to bother them; My customers have been more accepting of marigolds, during a farm tour, I asked the crowd who liked them in their CSA bouquets, most liked them, bright, cheery and long-lasting, there were a few who said they didn't like their smell and to them it was something they grow in the garden just to keep pests away, not something they would put on their table; Great color and cultivar for our sales; Not much difference between three gold variations.

Marigold 'Falcon Yellow' (AmeriSeed)

Good Qualities: Wonderful vibrant, clear yellow (9); Easy to grow (4); Long vase life (3); Productive (2); Tall (2); Easy germination (2); Not as fragrant as some; The best bright yellow marigold we've grown to date!; I found that 'Falcon Yellow' really branched out and I didn't pinch them, I could have sold these as 3 spraying-stem bunches, that a florist or customer could break up into up 10 usable stems, lots of blooms per spraying stem, average of 9 blooms per main (spraying) stem; Uniform flower size. Long stems with multiple blooms; Good head size; Fills out bouquets; Fairly sturdy; Wow! plant produced very large blooms with one main central long-stemmed spray with numerous long side shoots at the base; Mature height for us was 4 feet, they lasted well in event work, the blooms were large and worked well in garlands.

Problems: Customers do not like smell of marigolds (2); Heads easily break (2); Very strong fragrance when cutting and processing the flowers, short stems; Insect magnet outside; Not quite as productive as our other two standard varieties, 'Oriental Deep Gold' and 'Optiva Orange' (however, worth the sacrifice for the bright yellow color); Plants were not netted, the plants get top heavy so frequent harvest helps prevent flopping, but the ones we couldn't get to definitely fell to the ground, the nice thing is that they flopped at the base, so the stems stayed intact and still usable and saleable after harvest, no noticeable diseases or pest attraction; Foliar disease prone; Thin stems, shorter stems than other marigolds, customers rarely purchase these by the stem but seem to appreciate in pre-made bouquets, We didn't pinch this one hard enough, and ended up with short side stems, struggled to sell this color in our markets, customers bought orange hues 2 to 1 over yellow; Slightly shorter vase life than orange/gold varieties; Japanese beetles; Not as popular a color; None, needs staking, stems are really big; Same as for all marigolds, we find the necks and upper stems weaker, and need to be handled with care to prevent injury.

Similar Cultivars: No (2); 'Jedi Yellow'; I find all cut flower marigolds to be similar.

'Falcon Yellow'

Postharvest Recommendations: Water with chlorine; We treated all marigold cultivars the same, sometimes we harvested early in the morning and sometimes we just had to harvest in the heat of afternoon, I didn't notice a difference in vase life, and they were all treated the same postharvest, they were put straight into Chrysal #2 for cooler and moved to #3 for vase life testing out of the cooler; Plain water worked fine; Stripping 90% of all foliage, foliage does not look good after going into cooler, Chrysal Pro 2 and gerbera tablet; Take care not to overcrowd buckets, harvest into water from field we put in #2, do not store dry.

Comments: Love this one! Will definitely grow again!; All the marigolds grew well, the orange color is most desirable in marigolds, it seems, we did have the marigold in plugs longer than we would have liked, due to a very late spring; Varieties were trialed in field, greenhouse, and hoophouse conditions, field plants produced smaller heads and shorter stems and were targets of insect damage much earlier and heavier than plants under plastic (hoop and greenhouse), heat and dry conditions didn't seem to bother them; I never know how to treat marigolds—should they be pinched or not, if so, when is the best

time/place to pinch? I have not pinched in the past, the plant gets very shrubby after harvesting the first few stems; Cannot sell marigolds; Already ordered more seed for next year!; Highly recommend pinching at about 10 weeks (for us), the pinched plants were a bit later but the stem strength and cleaner stems (less branching) made it easier to harvest, and stems were somewhat stronger.

Marigold 'Jedi Orange' (AmeriSeed)
Good Qualities: Wonderful dark orange color (11); Great head size (3); Spectacular for fall bouquet work; Easy to grow, blooms for a long time; We grew this at the end of our season, but I think it's possible that it's slightly more disease resistant than 'Optiva Orange' (with leaf spotting), I'd want to trial earlier in the summer to test again; Long-lasting, great for market bouquets; This was by far my favorite marigold cultivar, the blooms displayed the quintessential orange of marigolds, customers loved it, the best part was the stems branched so low we were able to harvest about 7 stems per plant, stem width was not thick, which made it a bit fragile for the size of the heads, but still great in design; These are my personal favorite of all the Trial marigolds; Sturdy stems, this was the best-selling of the marigold cultivars that we trialed for this year, super healthy plants; Vase life, fills out bouquets; The best of all marigolds I grew; Healthy plants, good germ; Super tall, very productive, great long-stemmed spray plus numerous long stem side shoots.
Problems: None (2); Stems had very small caliper, weak (3); Very strong fragrance when cutting and processing the flowers, The heads break easily; Slightly less productive than 'Optiva Orange' (fewer stems per plant); Some customers do not like their smell; The thin stems were hollow and the heavy heads caused stems to snap. Still great cultivar and worth growing for us; Customers rarely purchase by the stem but seem to enjoy when included in pre-made bouquets; Required a deep pinch to get longer stems; The Japanese beetles just loved these plants; Needs staking for sure.

'Oriental Deep Gold'

'Jedi Orange'

Similar Cultivars: None (2); Similar form to 'Optiva Orange', we found them to be indistinguishable once harvested. However, 'Optiva Orange' produces 2-4 more stems per plant; 'Garland Orange'; I find all cut flower marigolds to be similar.
Postharvest Recommendations: Easy; Water with chlorine; We treated all marigold cultivars the same, sometimes we harvested early in the morning and sometimes we just had to harvest in the heat of afternoon, I didn't notice a difference in vase life, and they were all treated the same postharvest, they were put straight into Chrysal #2 for cooler and moved to #3 for vase life testing out of the cooler; Plain water works fine; Stripping 90% of all foliage, foliage does not look good after going into cooler, Chrysal Pro 2 and gerbera tablet.
Comments: Varieties were trialed in field, greenhouse, and hoophouse conditions, field plants produced smaller heads and shorter stems, and were targets of insect damage much earlier and heavier than plants under plastic (hoop and greenhouse), heat and dry conditions didn't seem to bother them; It was bright and pretty, but definitely had a marigold smell, these were not too overpowering, but when other growers have some that smell up the whole market, it can be a turnoff for even gentler-smelling ones; A very good substitute for 'Optiva Orange'; Jedi series did much better than Oriental series, more usable stems per plant and bigger blooms, I would definitely grow Jedi again; I never know how to treat marigolds, should they be pinched or not? I have never pinched and found that they get shrubby very quickly after harvesting the first few stems; Cannot sell marigolds; I put other marigolds (not in the Seed Trial) in another location on the farm hoping that they would be a host plant for the Japanese beetle—it just gave them two locations to munch; Will definitely grow this again!

Marigold 'Oriental Deep Gold'
(AmeriSeed)
Good Qualities: Great strong gold yellow hue between the orange and the lemon (7); Long vase life (4); Very productive (2); Strong stems (2); Sturdy (3); Good-sized head (2); This is our standard gold for production, disease resistant, strong stems, huge gold flowers; The plants were incredibly robust and strong; Fills out bouquets; Healthy plants, excellent germ; The blooms are the largest I have ever grown, easily 5.5-6 inches and very full and ruffled, good vigour, worked well for garlands.
Problems: Thin stems (2); None!; Only

1-2 stems per plant; Very strong fragrance when cutting and processing the flowers; Bloom size was smaller compared to Jedi, not as many usable stems, bushier plant; This was the shortest cultivar of all marigolds in the Trial, the biggest problem with this cultivar was that the stems didn't branch out as much and I'm wondering if pinching would have helped with that, the stems were thick and strong and hard to work with in design work, I only got a few usable stems of each plant; Customers rarely purchase by the stem but seem to enjoy when included in pre-made bouquets; Japanese beetles; Not as long as other varieties especially after a few cuts (were relatively shorter); Needed to be pinched to control branching, required sturdy support, the plant itself was strong but when planted at even the recommended spacing they were too crowded and difficult to keep upright, foliage odour not pleasant.

Similar Cultivars: 'AFM 888 Deep Gold' (3); 'Oriental Gold'; Hard to tell a difference between all the gold varieties, 'Deep Gold', 'Oriental Gold' and 'Oriental Deep Gold' all look and perform alike, it will be a coin toss next year as to which gets planted; We could not tell a difference between 'Oriental Gold' and 'Oriental Deep Gold'; I find all cut flower marigolds to be similar. I also find that the golds and deep golds are so close in color that I would not purchase both colors.

Postharvest Recommendations: Stripping 90% of all foliage, foliage does not look good after going into cooler, Chrysal Pro 2 and gerbera tablet; Water with chlorine; Plain water works fine; We treated all marigold cultivars the same, sometimes we harvested early in the morning and sometimes we just had to harvest in the heat of afternoon, I didn't notice a difference in vase life, and they were all treated the same postharvest, they were put straight into Chrysal #2 for cooler and moved to #3 for vase life testing out of the cooler; Do not overfill buckets to avoid damaging stems, strip in field, remove all foliage before bringing from field cut into water in field, then to #2 Chrysal and place in cooler.

Comments: These were pretty enough, there are, however, other marigolds that are more productive, therefore, I probably would not grow this cultivar again; After trialing 'AFM888 Deep Gold' and 'Oriental Gold', we'll continue to use 'Oriental Deep Gold' as our standard gold for production; I never know how to treat marigolds, should they be pinched or not? and if so when and where? I have never pinched and found that they get shrubby very quickly after harvesting the first few stems; Not much difference between other gold varieties; Customers really liked this as a bunch; Cannot sell marigolds; I grouped this one with 'Oriental Gold', finding them similar; Sowed these two Oriental colours April 24, good germination, they were transplanted to the field June 12, we had a wet, cold June and risk of frost that prevented an earlier planting, I would have given these two colours additional spacing as they are so vigorous and tall, I would plant as singles next time to see if the stems will be stronger and easier to harvest and keep standing, highly recommend pinching hard to encourage multiple single stems, we found they were all ready to harvest within a few days of each other, the unpinched blooms were quicker to flower, however, very branched and were harder to clean, the pinched stems were much stronger, less breakage and bent neck, foliage odor a concern especially as the plant matured.

'Oriental Gold'

Marigold 'Oriental Gold' (AmeriSeed)

Good Qualities: Great gold color (8); Productive (2); Long-lasting (2); Really good plant for fall bouquets (2); Nice size head (2); Easy to grow (2); Large double flowers, long stems; Nice for cuts, transplants easily; For sales and profit, this was the best cultivar, plants were strong, usable stem length at 22 inches tall; Sturdy, healthy plants, excellent germ; The blooms are the largest I have ever grown, easily 5.5-6 inches and very full and ruffled, good vigour, worked well for garlands; Strong stems.

Problems: None (3); Thin stems (3); Very strong fragrance when cutting and processing the flowers; Heads break easily especially in bunches, we tried making bunches smaller, but still had some broken heads, should probably be sleeved; Bushier plant, smaller bloom size, not as many usable stems compared to Jedi; Customers rarely purchase by the stem but seem to enjoy when included in pre-made bouquets; Japanese beetles; Only 1-2 stems per plant; Not as long as other varieties especially after a few cuts (were relatively shorter); Needed to be pinched to control branching, required sturdy support, the plant itself was strong but when planted at even the recommended spacing they were too crowded and difficult to keep upright, foliage odour not pleasant; Just slightly more yellow toned than the deep orange, very little difference, but the deep orange seemed to sell first, though that could just be circumstantial.

Similar Cultivars: 'Oriental Deep Gold', we could not distinguish the two, both in terms of color/form and productivity (2); All the golds are the same or seem really similar; The marigolds we trialed were all similar; '888 Deep Gold'; I find all cut flower marigolds to be similar, I also find that the golds and deep golds are so close in color that I would not purchase both colors.

Postharvest Recommendations: Easy, we use Chrysal #2; Water with chlorine; We treated all marigold cultivars the same,

sometimes we harvested early in the morning and sometimes we just had to harvest in the heat of afternoon, I didn't notice a difference in vase life, and they were all treated the same postharvest, they were put straight into Chrysal #2 for cooler and moved to #3 for vase life testing out of the cooler; Plain water works great; Stripping 90% of the leaves, Chrysal Pro 2 and gerbera tablet, cooler, leaves do not look good after being in the cooler; Do not overfill buckets to avoid damaging stems, strip in field, remove all foliage before bringing from field cut into water in field, then to Chrysal #2 and place in cooler. *NC State conducted vase life testing of this cultivar; see article in this issue for details.*

Comments: For all of the marigolds, we kept them outdoors to diffuse the fragrance, the pails then stayed outdoors on a covered porch in 20C+ weather for two weeks and stayed fresh, very long-lasting as a cutflower!; Marigolds did very well considering the growing problems we had this year, we were unable to get into the field until late May, they sat in plugs way longer than they should have and still came along and grew well; I never know how to treat marigolds—should they be pinched or not? if so when and where? I never know whether or not to pinch, I have never pinched and found that they get shrubby very quickly after harvesting the first few stems and become difficult to cut; Cannot sell marigolds; I never sold a single stem; I grouped this one with 'Oriental Deep Gold', finding them similar; Sowed these two Oriental colours April 24, good germination, they were transplanted to the field June 12, we had a wet, cold June and risk of frost that prevented an earlier planting, I would have given these two colours additional spacing as they are so vigorous and tall, I would plant as singles next time to see if the stems will be stronger and easier to harvest and keep standing, highly recommend pinching hard to encourage multiple single stems, we found they were all ready to harvest within a few days of each other, the unpinched blooms were quicker to flower, however, very branched and were harder to clean, the pinched stems were much stronger, less breakage and bent neck, foliage odor a concern especially as the plant matured.

Pulchinella Mix

***Papaver nudicaule* Pulchinella Mix** (Syngenta/Goldsmith)

Good Qualities: Brilliant colors (6); Fun shape; Not as delicate as other varieties.

Problems: Poor germination (2); We had only two plants bloom the first year, they did not like to be transplanted so we lost some at that stage; Several plants never flowered; Slower to bloom than 'Champagne Bubbles'; Flowers shattered very quickly after being cut, the plants died in our heat; Doesn't like weed pressure, needs to be sown in the fall for earlier bloom time; Color not desirable for spring; Not vigorous.

Similar Cultivars: 'Champagne Bubbles' (2), we did not see much difference in form/vigor/colors.

Postharvest Recommendations: Floralife extends vase life; Searing cut ends to extend vase life.

Comments: Tried growing in crates in tunnel and they never really took off; Would choose either this one or 'Champagne Bubbles' based on plug availability or price, not enough difference in performance to choose one over the other in our trial; The plants took all year to grow and never bloomed, they are still growing and have survived a hard freeze, I'm not sure what's going on, or they were not labeled correctly; This is the second year I've tried to grow poppies, spring seeding produced several flowers, but I heard (and saw) from friends that fall seeding produced even more! I saved back some seed and have a beautiful fall crop getting ready to overwinter, excited for spring and it's just turning autumn!; Would not grow again because of germ rate but would consider if plugs were available; Bright colors; I lost the whole tray of these because of damping off; I direct seeded these in the spring, not many germinated, those that did were tiny and nondescript.

***Penstemon hartwegii* 'Arabesque Appleblossom'** (Syngenta/Goldsmith)

Good Qualities: Gorgeous blushy color (8); Nice form—good alternative to foxgloves, can't wait to see how it does next year; Nice alternative to snapdragon for spike flowers; Different than a snapdragon or foxglove, more deluxe, Easy to grow, blooms fast, it's been through 5 frosts under 30 degrees, still looks awesome; It was a nice replacement for white foxgloves and a refresh from snapdragons! almost pure white in the early summer, that showed a dark pink outer petal as the temperatures dropped in the fall, survived frosts, will hope it comes back as a perennial next year; Nice stem length, very pretty; It was unique for wedding vases and bouquet work; The colour lends itself well for the current trend of blush pink/ivory tones, it is similar form to foxglove and snaps which adds an interesting addition to bouquets, they germinated well

'Arabesque Appleblossom'

and had no insect or disease problems.
Problems: Too short (7); Short vase life (3); Got a bit bug eaten; Petals tended to brown in the field; Seed did not germinate well, wilted very quickly after harvest; None, with the vole issues we had, I was surprised they left this cultivar alone; Poor germ rate; Stem length could have been greater, perhaps if it was grown with irrigation or in a tunnel, we had a dry June and were off to a slow start with no additional irrigation; I did not have much luck with this flower, only two plants survived our wet spring, when they bloomed they were too short to use, next year I am thinking I should have marketable stems.
Similar Cultivars: Foxglove (2)—for form; Snapdragon.
Postharvest Recommendations: Keep straight in bucket, clean water; Use hydrator; We harvested in the morning as much as we could and placed in the cooler in water with Chrysal #2 before using in arrangements, blooms held up well for about 5-7 days, when the lower blooms started to shatter; We harvested when half the blooms on the stem were open, usually in evening; Placed in hydrator for an hour then to #2 solution. *NC State conducted vase life testing of this cultivar; see article in this issue for details.*
Comments: We loved it, because we got only 100 seeds, we did not have a ton of the crop to sell to florists, we ended up using in all in a wedding event we had and it was amazing and it has been put into production for 2018; I'm curious to see how this is when it comes back next year—I feel it could be popular in wedding designs, however, can't remember if it stood up in bouquets; Love this plant, most of the perennials I planted for this Trial did not bloom this year but I am excited to see what happens next year; Hopefully they produce better next year; None survived either seeding or transplanting; I will be interested to see if these overwinter and how they produce next season, the plants were great but they took a long time to flower (September flowering), flower stems were very short; Not enough product for proper sampling due to poor germ rate; We used this variety a lot in wedding work, I found it offered a unique texture and colour which was beneficial to us, I was surprised at how much we used it, and with the constant harvest it kept producing stems, it is actually still blooming today (October 30), we will grow it next year.

Snapdragon 'Maryland Dark Orange'
(Ball/PanAmerican)
Good Qualities: Very dark, clear orange (11) that does not fade in the vase, has a pink/magenta tinge to the orange, customers raved about the color; Fast to flower (2); First cut is tall and strong; Still blooming, nice stems; I grow flowers only in the field, of all the snaps I have tried, this variety has been the most successful, works really well in fall arrangements, gets much taller as the season progresses, it's October 22 and it is still producing flowers; Will definitely grow this again, the plants were strong, after the main stem was cut, 2-3 stems branched out at the base, for another flush at 22-inch tall stems, this second flush was definitely not as strong, stems were not as upright, but great for design work, I loved it! next year I'll try growing them closer together, they were grown in 9-inch spacing, which turned out to be not so great, I think they can be at 6 inches and yield taller stems; Good height; Well-filled spikes, healthy plants; Sturdy stems, long flower heads; This is a strong plant, I think the early hot weather here really stunted its growth, I wish I had waited until the end of the summer to plant this so I could have had fall blooms.
Problems: None (2); Not good for outside plantings, short and disease prone; Not as thick, strong stems as Opus, not as many side shoots, field-grown snaps are not always the best in our Mid-Atlantic climate, due to it getting hot quickly here, these were planted in mid-April (4 weeks prior to frost free) but still struggled to be robust once our summer heated up; Long time until bloom in the field; I found this one fizzled out quickly for us, the weather turned warm and dry in July and I did not think it was as strong as some of our other varieties; We planted these in the high tunnel, I think it got too hot too fast since they were transplanted in March, they may have done better if planted in the fall, aphids; Voles looooooooooved them! we lost many plants that got chewed at the base, other than that, no major problems; Spotted stink bug really liked them; Much shorter than 'Potomac Orange'; Snap-

'Maryland Dark Orange'

'ProCut BiColor DMR'

dragons do not get a high price up here, common; Need to keep up with netting better—it grew so tall it outpaced my nets—a good problem to have.
Similar Cultivars: 'Overture Orange' (2); Not that I know of, I don't think 'Potomac Orange' compares to this, the color on 'Maryland Dark Orange' is an incredible dark orange/rust color, that seemed to have turned darker as the temps cooled down; Not that I have grown; 'Potomac Orange' is a much taller variety (24-inch stems), very similar color, 'Maryland' looks a bit darker orange which I really liked; Any other snapdragon; Pretty close to the orange in Opus series; 'Potomac Dark Orange'.
Postharvest Recommendations: Water and chlorine; Used plain water; We harvested early in the day and placed in Chrysal Hydrating Solution for a few hours and moved to #2 for cooler storage; Chrysal #2 and keep upright in bucket in walk-in cooler; Support heads, they droop over and face down. *NC State conducted vase life testing of this cultivar; see article in this issue for details.*
Comments: Probably great under cover; We grew 'Opus Orange', 'Maryland Dark Orange' and 'Overture Orange' all together, outside, Opus produced many more (about 2-3 times) strong, saleable stems, however, Opus flowers fade to a pale yellow/pink in the vase, Maryland held its orange color the best of the three varieties; This was my favorite flower in the Trial, loved the color, loved the plant, it was started early in the greenhouse, and had to wait way too long to get planted out due to weather conditions, but it came right along and was awesome; Love this snap, will grow again, I would also like to try other colors from the Maryland series in the field; I would think this would be best sown for a late crop (fall) in our area both for colour and growth, the summer heat did not agree with this snap; Plants were grown in field and hoophouse conditions, both grew similarly, hoophouse stems longer and earlier, field succession hit with stink bugs early and hard, summer-seeded plants are just starting to flower, nice to have the orange; I love the color and will grow again, we simply do not get a good price for snapdragons in New England but we love to grow them just the same; Rebloomed in the fall on shorter stems; The heads grew too large for cut flowers.

Sunflower 'Helios Flame'
(Harris Seeds)
Good Qualities: Great color (7); Very easy to grow (2); Sold well in farmers' market (2); Stronger-stemmed bicolor than others we've tested, would be good for tonal fall work, fast to bloom; Good cut flower: Takes neglect, did very well during our abnormally hot, dry summer, even with minimal irrigation, loved the smaller heads, they worked really well in smaller bouquets; Earliest to bloom—50 days from seeding, consistent pattern from stem to stem; It was the tallest of all cultivars trialed, I put down 36-inch usable stem because that's where we cut them, but the plants towered at well over 6 feet, some stems branched out over the summer since we didn't pull root balls for lack of time, and we ended up with a second flush of blooms, not as many or as big, not as great, but that was a nice surprise, still saleable stems!; This is another favorite of mine, I have grown it for the past 3 years and will continue to grow it every season, long vase life, and, if planted early, will give you long, well-branched stems after the first cut, plus, customers really like it; Different; Nice form, straight stems; Nice color for fall, not early summer; Absolutely great color for fall! Love the orange/red ring radiating out to yellow!
Problems: None (2); Bicolors are unusual and interesting, but can be hard to match in a pink or purple bouquet; We prefer solid colors for our supermarket bouquets; Seems to have more floppy heads than ProCut, when arranging bouquets you need to nest between other flowers to keep head upright; I particularly did not like this cultivar, the color, which is probably what it's attractive for, did not work for me and we couldn't move them, customers just wanted a plain yellow sunflower, and the mahogany-colored ring I think was a turn-off, I can see how this would be a great addition in a mixed bouquet or fall arrangements; Two heads on one stem; As with most bicolours I found it opens quickly and it is front facing and very flat, not something I find desirable in a sun, the colour is popular with only a small percentage of customers; I wasn't very keen on this one, colors not so great and quick to unfurl, not popular with costumers.
Similar Cultivars: 'ProCut BiColor' (4); 'Joker', 'Ring of Fire'; Looks like most bicolor sunflowers; 'ProCut Red/Lemon Bicolor', but 'Helios Flame' has more of a golden yellow outer petal.
Postharvest Recommendations: Changing water and clipping ends of stems on daily basis provides better vase life!; Used plain water; Chrysal CVBN; Gerbera tablets, clean buckets, cooler; Water with chlorine.
Comments: Two hearts for loving it!; Deer like them, lost most of them to the deer; Not a personal favorite, both colour and growth habit; Harvest #1 (July 20) 1 stem/plant with a stem length range of 18-25 inches, harvest #2 (August 9) 6-8 stems/plant with a stem length range of 16-32 inches; Customers seem to want the standard or the white.

Sunflower 'ProCut BiColor DMR'
(NuFlowers)
Good Qualities: The color is magnificent (5); Sturdy stems (3); Slower to open; Good, fast-blooming bicolor; Tall stems, the coloring on these was not as pronounced as in 'Helios Flame', which I liked better, the heads were larger than 'Helios Flame', which made them harder to work with, but still a great showy sunflower; Long vase life, I love the ProCut series of sunflowers; Pollen-free, great for market bouquets and sunflower bunch sale, sold well in farmers' market sales, slower in wholesale; Stem length; Customers really enjoyed the color, easy to design with; Good bicolor for depth of shading and ring size, plants were healthy, especially in a year of downy mildew.
Problems: None (2); Short vase life if water isn't changed regularly; Bug damage; Heads seemed to look down; We prefer solid color sunflowers; Bicolors are fun but can be hard to work with, they don't blend well with pinks or purples; No problems with the actual cultivar, they just didn't sell well with retail or florists; Buds on stems, but not multi-branching; Do not care for dark-coloured suns, I find they do not hold up like the typical sun colours, they have that typical flat face and floppy neck, they seem to open and deteriorate quickly with no holding ability, petals not strong and open to curl back.
Similar Cultivars: 'Helios Flame' (4); 'ProCut BiColor' (2); 'Joker', 'Ring of Fire'.
Postharvest Recommendations: Cutting stems and replacing water in vase daily increases vase life tremendously!!!!!; Water with chlorine; Used plain water; Gerbera tablets, clean bucket, cooler; Chrysal CVBN. *NC State conducted vase life testing of this cultivar; see article in this issue for details.*
Comments: One client kept either a 'Helios Flame' or 'ProCut Bicolor' in a vase for 3 weeks by cutting and replacing water daily, fun test for her; Did not have any downy mildew problems until late in the year, after these bloomed; Flower color not consistent, some were solid color, some faint bicolor, some dark bicolor; We did not have any problem with downy mildew this season (and we've struggled in the past) so it's hard to evaluate its resistance; Customers seems to want the standard or the white; Overall nice flower, not our biggest sunflower seller; No downy mildew issues, so DMR isn't appealing unless there is a price differential; I did not see any difference or benefit to the DMR over the regular 'ProCut Bicolor'; The bicolor was not a favorite and was hard to sell; My customers love this plant; I am not a fan of dark suns, due mainly to their inability to stay intact and last longer than they do, as with the other DMR varieties, this feature is very welcome, we had a very good year with little mildew issues, it is honestly difficult for me to say if the DMR variety showed greater resistance.

'ProCut Orange Excel'

Sunflower 'ProCut Orange Excel'
(NuFlowers)
Good Qualities: Great solid orange color, dark center (8); Strong stems (4); Long vase life (2); Very quick to bloom (2), approximately 5-7 days before 'ProCut Orange'; Tall stems (2); Very easy to grow, takes neglect, did very well during our abnormally hot, dry summer, even with minimal irrigation; Compact flower heads, less quick to open; The best yellow sunflower I've ever grown! easy to grow, great germination, great yellow color on an easy-to-use bloom, customers loved it!; Smaller head which is nice in bouquet work; Would definitely be worth trialing for late summer production, we direct seeded 5/30; Healthy and nice; Most popular farmers' market sun, by far; It seemed more vibrant than the 'ProCut Orange', it faces upward which is desirable for bouquet making, an improvement to 'ProCut Orange'; Strong head; Standard sunflower color to me, nothing exceptional; Great for market bouquets.
Problems: None (4); Heads are a little too large for my uses; Front-facing heads can be a challenge in bouquet work, though they are great in straight bunches; Boring color, thin stems.
Similar Cultivars: 'ProCut Orange' (4); 'Sunrich Orange Summer'.
Postharvest Recommendations: I think all sunflowers like clean vase water and cut stem ends, nothing like a sunflower to get the vase all slimy!; Water with chlorine; Used plain water; We found this variety stored well dry, we often have too many coming on at the same time and experimented by cutting them and storing dry for up to two weeks in our cooler before rehydrating, for using fresh we would cut and place in #2; Chrysal CVBN tabs; Gerbera tablets, clean buckets, cooler. *NC State conducted vase life testing of this cultivar; see article in this issue for details.*
Comments: Nice standard; This is a good variety, an improvement over 'ProCut Orange' with a deeper colour, it seem to have a larger centre, to us is an important feature and one that is lacking in most ProCut varieties, a definite improvement to 'ProCut Orange'; Great germination, we sold every bloom.

Sunflower 'ProCut White Lite'
(NuFlowers)
Good Qualities: Unique color (9), LOVE LOVE LOVE the color; Sturdy stems (2); Very easy to grow (2); Long vase life (2); Great germination (2); New color for single-stemmed sunflowers; I really liked this colour and is going to be a refreshing change in the sunflower family, it offers a unique choice for bouquets especially early season where suns are thought of as autumn flowers, I found people very curious about this colour, especially this light-centred variety—they would immediately pick it out of a bucket and want to include in their purchase, also has a larger centre and larger flower than the regular ProCuts; Our supermarket customers loved this! this surprised us because they usually prefer a very traditional dark-centered gold sunflower,

they equally preferred 'White Lite' and 'White Nite', these had a sophisticated feel to them; Florists that we asked liked this light-centred version because it didn't overpower the arrangement, good usability in mixed bouquets.; Well received by retail customers and florist, different and special; Incredible! my favorite cultivar in the whole Trial! I wish we had planted more successions of these, the heads were the perfect size, the stems were the perfect width, overall a total winner, no diseases present; Customers loved this sunflower, I had people calling me up and looking for me at different markets to get their hands on these babies! tell me where to get more because I must have them for next season!; Quick seller on the wholesale floor, as well as in farmers' market; Thick stems; Will definitely grow 'White Lite' and 'White Nite' again, customers raved about them, marketable stems; Customers VERY excited about this variety, asking repeatedly if we are growing this next year, sold every stem; Smallish heads, great for bouquet work especially for white/light bouquets; Direct seeded; Takes neglect, did very well during our abnormally hot, dry summer, even with minimal irrigation; Popular with market customers; Size of head.

Problems: None (3); More insect issues than with other cultivars (3), had to cut flowers fairly tight to defend against insect damage; I found the neck to be the weakest point and when using in bridal bouquets would need to reinforce the stem, in the early planting there were a small percentage of multiple blooms making them unusable, they appeared only in the earliest sowings; Stems nodded a bit over time, more so than traditional sunflowers; A number of the blooms wouldn't open, many were too small; For some reason, the transplants did not perform well for this cultivar, I planted them right next to the 'White Nite', but these were short, possibly because they were on the north side of the row in short days of late summer through early fall, did not get many harvestable stems; Not as long of a vase life as other sunflowers; Insect magnet during midsummer growth periods, plants seeded on 6/24/17 were unmarketable from bug damage when harvested on 8/19/17, but the next succession seeded 7/21/17 and harvested 9/15/17 were stunning; I felt the centre was too large for the petal length, pretty, but not as proportionate as I would have liked; Too quick to unfurl; Smaller flowers, heads dropped.

Similar Cultivars: None (2); 'White Nite' (2); 'Jade'; I've heard it looks like 'Jade' sunflowers, but the shape of the petals on 'White Lite' is different, 'Jade' seems to have more elongated petals with smaller green centers, while 'White Lite' has wider petals and bigger centers that's actually more yellow than green; Other ProCut varieties; I used to grow a variety called 'Coconut Ice' that was similar, can't find seeds anymore, nice to find a single-stemmed all-white variety even if I need to watch seeding and harvest dates carefully due to insect pressure.

Postharvest Recommendations: Cut early in day, do not harvest when super tight as I found the neck a bit weak with these and they needed to be a bit more mature to stay upright; Water with chlorine; Used plain water; Chrysal CVBN. *NC State conducted vase life testing of this cultivar; see article in this issue for details.*

Comments: Will definitely grow more of these! (3); This was a highlight of our sunflower trials this year, people were very impressed with this one, including us, it takes a little longer to bloom than the usual 50ish days for most ProCut varieties, from a May 28 sowing it bloomed 64 days later, we did succession sow this one and found ourselves waiting for the next planting to begin, it also offered some side shoots after the main stem was cut, the weaker neck hopefully will be addressed, 'ProCut White Lite' is a definite addition for us going forward; Nice and special but lots of smalls and duds in the lot; I was able to charge more for these because of their uniqueness and customer demand; We were very impressed with this cultivar and will be looking to grow many more in the coming seasons; Anticipating high demand for this flower; Will try these again next year during long days or late spring, but probably not fall; These sunflowers are guaranteed to be a hit with florists and retail customers and gardeners; I've always been and will continue to be a big sunflower grower, seeding and transplanting every 10

'ProCut White Nite' are the reason I do these trials—to have these unique flowers before anyone else! Definitely the best new flower in years.

'White Lite'

'White Nite'

days helps me have sunflowers at market and for bouquet work constantly, love the different varieties that are coming out, would love to find more perennial varieties, especially ones with small heads for those tiny little places in a bouquet that need a touch of yellow; This was a great sell at all my markets, early in the season, not so much in September.

Sunflower 'ProCut White Nite'
(NuFlowers)
Good Qualities: Creamy petals with contrasting dark center (9); Customers VERY excited about this variety (4), asking repeatedly if we are growing this next year; Easy cultivation (3); Excellent vase life (2); Sold every stem; Our supermarket customers loved this! this surprised us because they usually prefer a very traditional dark center gold sunflower, they equally preferred 'White Lite' and 'White Nite', a more sophisticated sunflower; could be good for event work; Unique; Lasts for days without browning like other light-petalled varieties; Well received by retail customers and florist, different and special; Same as 'White Lite', this cultivar was beautiful, easy to sell (it sold itself!), nice long stems (both 'White Lite' and 'White Nite' were about 5'8") and great to design with; I had people calling me up and looking for me at different markets to get their hands on these babies! they are unique and beautiful, tell me where to get more because I must have them for next season!; First to go at farmers' market and on the wholesale floor, had designers climbing into the truck to get them; Contrast is great in bouquets, customers love, good stems, MANY side stems with good height and sturdy stems (like 'White Lite'); This was a refreshing change from the usual sun colours; It was not a bright white, more like a buttercream white, nevertheless, nice option for sunflowers; Marketable stems; Very striking in a white bouquet! nice head size, not too big; Takes neglect, did very well during our abnormally hot, dry summer, even with minimal irrigation, they are a little large for me, but that is overcome with the beauty; My favorite of the sunflowers for color; This is a great sunflower for early summer.

'Sunfinity'

Problems: None (3); Heads nodded slightly sooner than traditional sunflowers (2); Deer find them tasty; A few duds, many were too small, even with summer plantings; Insect damage was more severe than on other sunflowers, need to cut earlier, heads were a little bit floppy, our designers seemed to prefer the 'White Lite', but they all sold quickly; Insect pressure higher than other suns; The only problem was the weak neck, it was healthy, and germinated well; Planted in fall, stems were short and cucumber beetles went to the white flowers first thing; Light color attracts insects! need to be careful of planting times so that they aren't being asked to bloom during peak insect pressure (July-August), September-October blooms are great, May blooms also did well; Bug magnet, quick to unfurl.
Similar Cultivars: None (2); 'White Lite' (2); Other ProCut sunflowers; 'Coconut Ice', but these were definitely sturdier and shaped more like the other ProCuts.
Postharvest Recommendations: Water with chlorine; Used plain water; Wait until petals are lifted before harvest, if harvested too early the neck will not support the flower; Gerbera tablets, clean buckets, cooler; Chrysal CVBN. *NC State conducted vase life testing of this cultivar; see article in this issue for details.*
Comments: These sunflowers are guaranteed to be a hit with florists and retail customers and gardeners, we will be expanding production of these next year; Florists loved them, these are the reason I do these trials! to have these unique flowers before anyone else, definitely the best new flower in years; Will definitely grow more of this!; Very nice unique color; This was popular with visitors to our trial and Instagram account; Nice and special but lots of small and duds in the lot, florists loved them; I was able to charge more for these because of their uniqueness and customer demand, of the whites, this is my personal favorite; Yes, yes, yes to this one and its sister 'White Lite', lots more of these in our future!; 'ProCut White Nite' was another hit for us, we really enjoyed the colour and habit, I liked the fact they were larger than 'ProCut Orange' with a nice centre and strong petals, I would not recommend for shipping unless the weaker neck could be improved, it is a wonderful addition, looking forward to adding to our fresh sunflower list, this one was a couple of days later than the 'White Lite'; Will definitely grow this again and even though I am usually opposed to dyed flowers, if I have customer who must have a certain color, these apparently are dyeable, might experiment with that a little next season; Thanks for putting effort into

finding light-colored sunflowers, love them, and it's nice to find single-stemmed, pollenless varieties that I can continue to grow for years to come; This mixed well with yellow snapdragons, bupleurum, and daises, customers couldn't get enough of them; Customers LOVED the color, it was unique and easy to pair with other bright-colored flowers.

Sunflower 'Sunfinity'
(Syngenta/Goldsmith)
Good Qualities: Small flower size great for bouquets and smaller arrangements (9); Great golden yellow color (7); LOVED THE COLOR!; Remarkable stem production. (7), the best I have ever seen; Extended harvest/cut-and-come-again quality (2); Different; Branching sunflower, even when unpinched, heads were pretty for petal-less look in arrangement—somehow the more open shape was useful for this; Nice stem length; From a May 28 sowing this variety did not stop until our first -0C temps, I would recommend it highly as a backyard sunflower; Multiple flowers per plant; Easy germination, direct seeded; Very easy to grow, takes neglect, did very well during our abnormally hot, dry summer, even with minimal irrigation; Would look great as a landscape plant, looked so pretty in the field untouched because we stopped harvesting it because it was unmarketable; What a great little plant! we planted far more than we needed, but I didn't know they were a cut-and-come-again! will definitely grow again! plants are about 48 inches tall, 24-inch stems; Well branching.
Problems: None (2); Floppy, weak stems (3); Short shoots (3); Stems were not quite as strong as single-stemmed varieties, tended to nod in the vase, we prefer single-stemmed for bouquet production due to ease of harvest and programmability; Took a very long time to grow and produce flowers; Pollen; Too branchy, not a great cut for us; Postharvest was tricky, some did well while others wilted; the first blooms were beautiful, and I had a ton, but as the plant continued to bloom, the flowers did not look as robust, plus I think the bugs discovered them, the period

'Vincent's Choice Deep Orange DMR'

from petal lift to full-blown open was literally overnight, I thought they were supposed to bloom for months, I did two plantings and they finally died out after about 90 days, the second midsummer planting was not as productive and by then the bugs totally found their happy spot (cucumber beetles, etc.) so I got only a few stems from those; The high price and multi-branching habit will limit use for regular sunflower production, but for small patches and more ornamental use, this is a great plant!; Very bushy, hairy stems, unmarketable, not sturdy; Deer find them tasty; I couldn't figure out the right time to harvest this or how. I never seemed to get the timing right, either you do the whole thing and droopy side shoots (and really bulky) or cut out the centre and have not super useful sideshoots; To use this in a bouquet I found that single flowers were too short and a cut of 3-5 flowers left too much room to fill with other flowers.
Similar Cultivars: None listed.
Postharvest Recommendations: Used plain water; Cutting tight reduced pollen problems; Same as for any sun—cut into water early in day or evening; Gerbera tabs; Keep the water clean and stem ends trimmed for longer vase life!; Treated like a sunflower, but vase life was a bit less than a regular sunflower. *NC State conducted vase life testing of this cultivar; see article in this issue for details.*
Comments: Maybe has potential; Harvest #1 (July 20, 2017) 1 stem/plant with a stem length range of 15-25 inches, harvest #2 (August 9, 2017) 5-18 stems/plant with a stem length of 17-43 inches; The lower stems on the pinched plants had very small caliper; Would be great for a pick-your-own or other limited space situation; I would not grow again as a cut flower, it took way too long to produce flowers (almost 115 days), flowers were unspectacular, customers were unimpressed with this one; We weren't able to market this well, because of the pollen issue; Not a great cut for us; I would not recommend this as a commercial cut flower, the typical stems from a branching type do not lend themselves well for shipping nor do they have a strong neck as desired in a good sun, I would, however, highly recommend 'Sunfinity' for a you-pick cutting garden, or as a backyard plant for its amazing ability to produce stems, time and time again, I marveled at the ability of this plant to produce flowers, and the bright yellow petals were highlighted by the velvet black centre, I would have no hesitation recommending this variety for the above purpose, 'Sunfinity' is the best branching variety I have seen for nonstop stem production and good vase life, I did sow it several times as I do with all suns, the best production came from a May 28 sowing, directly into a 50 cell tray that was later planted in an unfertilized field with no irrigation, they require more growing room than standard singles in order to encourage the potential of the multiple stems, great variety!; I really like the 'Sunfinity' and will probably grow it again, but probably only as an accent plant or if I have leftover space in a row, not for production; Wish I had more seed for second or third succession, alas, next year I'll order some!; Great plant! glad to have trialed it, will grow again!; Flowers look like rudbeckias; I wasn't keen on this, but then again, I'm not a huge sunflower fan or grower; Looked great in the field; This really is a revolutionary Sunflower with

its long bloom time! Kudos to the breeder! *Note*: NCSU compared pinched and unpinched production—pinched plants produced 33 stems that averaged 25 inches long, and unpinched plants produced 29 stems that averaged 23 inches.

Sunflower 'Vincent's Choice Deep Orange DMR' (Sakata Seed)
Good Qualities: Great color (8); Long vase life (4); Fast to flower (3); Sturdy (2); Good germination (2); Good flower size, plant health was good despite poor weather conditions—an excellent year to see downy mildew resistance!; No downy mildew, healthy, nice; Very easy to grow, takes neglect, did very well during our abnormally hot, dry summer, even with minimal irrigation, loved the petal shape; Small head; Great cut; Like the double petal layer, slower to unfurl; Holds up better than' Vincent's Choice'; Great sunflower, probably a top choice, right along with 'ProCut Orange Excel', perfect for straight bunches, easy to sell—a winner; No pollen; Any variety which offers the benefit of downy mildew resistance is always helpful; Upright facing, layered petals; Great color presentation and stem length, easy grower, few IPM issues.
Problems: None (2).
Similar Cultivars: 'Vincent's Choice', I could not tell any difference visually between the two, we, fortunately, did not have downy mildew this season (and we've seriously struggled with it in the past), so I could not tell if the DMR was significant or not, our main two suns are 'Vincent's Choice' and 'ProCut Orange' for bouquet production; 'ProCut Orange Excel' is pretty similar in color; 'ProCut Gold'.
Postharvest Recommendations: Added Chrysal CVBN tabs to water; water with chlorine; used plain water; gerbera tablets, clean buckets, cooler. *NC State conducted vase life testing of this cultivar; see article in this issue for details.*
Comments: Nice sunflower; I will be growing this one next season for sure, it's a great all-around sunflower; Loved this one! have grown before and loved it then too!; Harvest #1 (July 20, 2017) 1 stem/plant with a stem length range of 25-39 inches, harvest #2 (August 9, 2017) 3-5 stems per plant with a stem length range of 6-17 inches; I'm not a huge fan, my customers prefer a more traditional flower in the yellow/orange color; We don't usually have an issue with downy mildew, so we wouldn't necessarily seek out a DMR variety, but it is a lovely sunflower; Not much difference from 'Vincent's Choice'; I succession sowed this variety later in the season when the DM starts to become an issue, this year was surprisingly good here with only minimal issues, as we did not have mildew problems this season I can't honestly tell whether there was any benefit over the non-DMR, I will search out any DMR varieties to grow for 2018, any varieties offing the feature will be an obvious help in prevention; will definitely grow this one again, nice stem length even in short days of fall where the 'ProCut Gold' planted immediately next to and seeded at the same time, were much shorter and smaller.

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2017 ASCFG Seed Trial Results. First row of data for each cultivar is the average and the second row is the range of responses. Note when only one response is listed in the range line, several trailers responded and all gave the same rating.

Species Cultivar Company	Yield (stems/plant)	Stem length (inches)	Market appreciation rating[1]	Repeat again rating[1]	Ease of cultivation rating[1]	Average postharvest life (days)
Aquilegia caerulea 'Kirigami Mix' Syngenta/Goldsmith	**0.5** 0-2	**9.3** 4-13	**2.6** 1-4	**3.4** 1-5	**3.7** 2-5	**-** -
Campanula 'Campbell Blue' Syngenta/Goldsmith	**2.7** 0-12	**17.8** 8-36	**3.6** 2-5	**3.4** 1-5	**3.8** 2-5	**7.4** 5-12
Cosmos 'Xanthos' Harris Seeds	**8.1** 0-20	**16.5** 5-33	**3.1** 1-5	**2.6** 1-5	**4.5** 2-5	**6.3** 4-14
Delphinium 'Excalibur Mix' Syngenta/Goldsmith	**2.1** 0-7	**18.4** 10-36	**2.5** 1-5	**2.8** 1-5	**3.0** 2-5	**6.0** 5-12
Delphinium 'Planet Light Pink' Sakata	**3.3** 0-10	**13.6** 8-26	**2.8** 1-5	**2.9** 1-5	**2.9** 1-5	**7.3** 5-10
Dianthus 'Sweet Magenta Bicolor' Ball/PanAmerican	**5.8** 1-15	**15.3** 8-30	**3.3** 1-5	**3.6** 1-5	**4.1** 1-5	**10.1** 5-14
Dianthus 'Sweet Maxine' Ball/PanAmerican	**5.8** 1-15	**16.0** 8-30	**3.1** 1-5	**3.1** 1-5	**4.0** 1-5	**10.6** 7-14
Dianthus 'Sweet Pink' Ball/PanAmerican	**5.7** 1-12	**14.2** 8-30	**3.1** 1-5	**2.9** 1-5	**4.2** 1-5	**9.9** 7-14
Dianthus 'Sweet Pink Magic' Ball/PanAmerican	**5.6** 1-15	**14.0** 8-30	**3.3** 1-5	**2.9** 1-5	**4.3** 1-5	**10.7** 7-14
Hibiscus 'Mahogany Splendor' Harris Seeds	**20.0** 3-100	**25.0** 8-48	**4.3** 1-5	**4.6** 2-5	**4.6** 2-5	**9.2** 4-20
Kale 'Crane Feather Queen' Harris Seeds	**1.1** 0-3	**24.8** 10-40	**3.6** 1-5	**3.9** 1-5	**4.2** 1-5	**13.9** 8-21
Kale 'Scarlet' Harris Seeds	**3.0** 1-22	**24.5** 10-40	**3.4** 1-5	**3.4** 1-5	**4.4** 2-5	**8.4** 3-21
Lisianthus 'Rosanne 1 Black Pearl' Sakata	**2.1** 1-5	**18.0** 12-30	**3.7** 2-5	**3.7** 1-5	**4.0** 2-5	**12.7** 7-21
Lisianthus 'Rosanne 1 Green' Sakata	**2.4** 1-6	**16.9** 10-24	**3.3** 2-5	**4.0** 2-5	**3.9** 1-5	**13.7** 9-20
Lisianthus 'Rosanne 2 Deep Brown' Sakata	**2.6** 1-6	**18.3** 11-24	**4.5** 3-5	**4.6** 3-5	**4.2** 2-5	**12.8** 9-21

[1] 1 to 5 scale, with 5 being the best. Market ratings are based on sales to wholesales, retailers, or final consumers direct.

2017 ASCFG Seed Trial Results. First row of data for each cultivar is the average and the second row is the range of responses. Note when only one response is listed in the range line, several trailers responded and all gave the same rating.

Species Cultivar Company	Yield (stems/plant)	Stem length (inches)	Market appreciation rating[1]	Repeat again rating[1]	Ease of cultivation rating[1]	Average postharvest life (days)
Marigold '888 Deep Gold' AmeriSeed	**9.4** 1-25	**19.4** 14-30	**3.3** 1-5	**3.3** 1-5	**4.5** 2-5	**12.5** 6-21
Marigold 'Falcon Yellow' AmeriSeed	**8.3** 1-25	**19.4** 8-36	**3.2** 1-5	**3.7** 1-5	**4.6** 2-5	**11.3** 7-20
Marigold 'Jedi Orange' AmeriSeed	**8.8** 1-25	**20.3** 8-37	**3.5** 1-5	**4.2** 1-5	**4.6** 2-5	**12.3** 8-20
Marigold 'Oriental Deep Gold' AmeriSeed	**9.0** 2-29	**19.9** 8-32	**3.3** 1-5	**3.4** 1-5	**4.6** 2-5	**11.8** 7-20
Marigold 'Oriental Gold' AmeriSeed	**8.6** 1-25	**19.1** 8-32	**3.5** 1-5	**3.5** 1-5	**4.6** 2-5	**12.6** 7-20
Papaver nudicaule 'Pulchinella Mix' Syngenta/Goldsmith	**3.1** 1-8	**16.8** 7-24	**3.1** 1-5	**2.4** 1-5	**2.9** 1-4	**4.5** 3-7
Penstemon hartwegii 'Appleblossom' Syngenta/Goldsmith	**4.0** 1-7	**14.5** 8-24	**3.5** 1-5	**3.8** 2-5	**4.1** 2-5	**5.0** 3-7
Snapdragon 'Maryland Dark Orange' Ball/PanAmerican	**4.9** 1-10	**20.8** 12-30	**4.4** 2-5	**4.0** 1-5	**4.1** 2-5	**7.0** 4-10
Sunflower 'Helios Flame' Harris Seeds	**1.5** 1-9	**37.1** 15-65	**4.1** 1-5	**3.7** 1-5	**4.8** 3-5	**8.1** 6-10
Sunflower 'ProCut Bicolor DMR' NuFlowers	**1.0** 1	**42.9** 24-72	**4.0** 1-5	**3.8** 1-5	**4.9** 4-5	**8.0** 5-10
Sunflower 'ProCut Orange Excel' NuFlowers	**1.1** 1	**41.1** 24-60	**4.7** 3-5	**4.3** 1-5	**4.9** 4-5	**8.3** 5-11
Sunflower 'ProCut White Lite' NuFlowers	**1.1** 1	**38.2** 12-72	**4.7** 3-5	**4.7** 1-5	**4.7** 3-5	**8.4** 6-14
Sunflower 'ProCut White Nite' NuFlowers	**1.1** 1	**36.5** 12-72	**4.9** 4-5	**4.9** 4-5	**4.7** 2-5	**8.4** 6-14
Sunflower 'Sunfinity' Syngenta/Goldsmith	**11.2** 0-33	**19.2** 8-30	**3.5** 1-5	**3.0** 1-5	**4.7** 4-5	**8.4** 5-14
Sunflower 'Vincent's Choice Deep Orange DMR' Sakata	**1.1** 1-4	**38.8** 6-84	**4.5** 3-5	**4.4** 3-5	**4.9** 4-5	**8.3** 7-11

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Filipendula '**Venusta**'

Heucherella '**Art Nouveau**'

Stokesia '**Mel's Blue**'

2016 Perennial Trial Report, Year 2

John M. Dole, Ingram F. McCall, and Judy M. Laushman

Occasionally, the second year of the Perennial Trial can produce very different results from the first as the plants become established and productive. In 2017, however, the best performing species were virtually the same as in 2016. Interestingly, all of the highest-ranked species also happened to be native to North America.

The top performer was *Stokesia* 'Mel's Blue', appreciated for its large, striking purplish-blue flowers on durable plants. Stem length was on the short side, averaging a little over 15 inches, but at least one Trialer had 24- to 36-inch stems. Trialers averaged about 10 stems per plant. Officially, the native form of this species, *Stokesia laevis*, is cold hardy in zones 5 to 10. Not surprisingly, all plants died over the winter in Zone 3, but a few plants also died in other zones. Stokesia is known to be sensitive to wet feet during the winter, so be sure to plant in well-drained soils and raised beds, if possible. Vase life was a respectable 10 days, but at least one grower noted that it could be variable. We should also note that stokesia flowers will close at night.

Eupatorium 'Baby Joe' was the standout flower in the first year and continued to do very well in its second. 'Baby Joe' produced long stems topped with small fuzzy, purplish pink flowers that add great texture to bouquets and arrangements. At least a couple of the Trialers used the stems in bud before the flowers opened. Plants produced an average of 8 stems that were 40 inches long. The cultivar name Baby Joe refers to the fact that this plant is a shorter version of the native species, which occurs in the eastern United States and Canada. While this seemed to be the situation for most Trialers, one reported stems up to 80 inches long! Productivity ranged from 1 to 18 stems/plant. Vase life was just long enough at 7 days, with some reporting 10 days. Plants were durable, with only two Trialers reporting plant loss over the winter (10 and 15%) and both were in Zone 7. Thus, 'Baby Joe' was hardy from Zones 3 to 9, which matches the reported hardiness range for the original species. All plants flowered in the second year, which was not surprising since most plants flowered in the first year anyway. For the record, this species has undergone a name change: *Eupatorium* 'Baby Joe' is now known as *Eutrochium dubium* 'Baby Joe' and you might find it under either name.

Physostegia is known as obedient plant—if you move the individual florets on the short spikes in various directions they will stay in place. Not sure that is a particularly useful trait to have in a cut flower, but it does give you something to do during slow times at the market. *Physotegia* 'Pink Manners' was apparently named for the fact that it is more of clump-former ("manners") than a runner. At least one Trialer confirmed this trait, saying that it was a good plant to use with black plastic production. Most growers will be happy to know that 'Pink Manners' won't become invasive. Plants produced an average of 11 stems of pink flowers that were 26 inches long. Productivity ranged from 4 to 36 stems/plant and length from 16 to 48 inches. Plants were quite durable as only few died in the second year and most of those were in Zone 9b.

Filipendula rubra's common name is queen of the prairie, due its tall stems topped with large clusters of beautiful soft pink flowers. Sounds great, except for the fact that the flowers lasted up to three days at most. Cut flowers growers, being a resourceful group, made the best of it by by either harvesting in the bud stage, or more commonly, in the seed stage after the petals dropped: "Dried in fall as brown seed heads, it was amazing". Trialers harvested an average of only two stems per plant; however, at least one cut 5 to 10 stems/plant. Stem length ranged from 24 to 72 inches, with a respectable average of 46. Plants were quite hardy with only two reports of some plant loss over the winter (10 and 15%). Thus, the reported cold hardiness range of Zones 3 to 8 matches our data, except that it also did fine in Zone 9.

Results for *Astrantia* 'Roma' and *Heucherella* 'Art Nouveau' illustrate the importance of having a broad range of Trialers. *Astrantia* did well in Zone 3, but struggled elsewhere. *Heucherella* plants performed fairly well for most growers (except in Zone 9). However, differences existed: at least one participant thought "Leaves were excellent in bouquets, boutonnieres, corsages", while another stated "Our florists and customers did not have a use for this plant".

Interpreting the trial results: The numbers reported are averages of all the respondents and many factors will affect the success of any plant species. Our participants grow and harvest the trial plants using several methods. After looking at the average, check the range of responses listed below each number to see how the cultivar performed at its best and its worst. If the range of responses in the ratings is narrow and high, i.e., 3-5 or 4-5, the plant was a winner for most of the respondents and is likely to do well for you. The 'Repeat Again Rating' is particularly important because it indicates if the trialer would take the time, money, and space to actually grow the cultivar again. Review the trial results carefully. If a cultivar sounds interesting, but did not appear to do well, try it anyway. The cultivar may work well for you.

Acknowledgments: A major thank you to each of the 11 evaluators who returned their Trial reports. Congratulations to Jeanie McKewan for being the first to submit her data again this year! We also want to thank Pioneer Garden for providing such great cultivars, as well as Nathan Jahnke, Cristian Loyola, and Ben Bergmann for assisting with the NCSU trials. In preparing the report we did a bit of editing of the comments for space and clarity; our apologies if we've altered the tone or content of anyone's comments.

Supplier

Pioneer Gardens
Deerfield, Massachusetts
www.pioneergardens.com

Physostegia '**Pink Manners**'

Trialers

Steve and Gretel Adams
Sunny Meadows Flower Farm
Columbus, Ohio
Zone 6a

Renee Clayton
Wild Scallions Farm
Timberlake, North Carolina
Zone 7b

Tanis Clifton
Happy Trails Cut Flower Farm
Dennis, Mississippi
Zone 7b

John Dole/Ingram McCall
NCSU
Raleigh, North Carolina
Zone 7

Michelle Elston
Roots Cut Flower Farm
Carlisle, Pennsylvania
Zone 6

Bailey Hale
Ardelia Farm & Co.
Irasburg, Vermont
Zone 3b

Lennie Larkin
B-Side Farm
Sebastopol, California
Zone 9b

Jeanie McKewan
Brightflower Farm
Stockton, Illinois
Zone 5

Rebecca Perry
Sabatia Flower Farm
Centerville, Massachusetts
Zone 6.5

Richard Uva
Seaberry Farm
Federalsburg, Maryland
Zone 7a

Emily Watson
Stems Cut Flowers
Milwaukee, Wisconsin
Zone 5b

Summary of Comments

The number in a parenthesis refers to the number of respondents who made the comment. If no number is present, only one person made the comment. Comments by each individual are separated with a semicolon(;). Note: many respondents did not make specific comments on each cultivar and in some cases, comments have been shortened because of limited space.

Astrantia 'Roma'

Good qualities: Gorgeous color (2); Quite easy and carefree; Not grown locally in my market, designers all love it, great accent flower; Beautiful form, very long lasting, great for boutonnieres, personal flowers—holds up well out of water; The flowers are tough and last really well in our farm bunches; Pretty, after the first flush it produced random stems until frost.

Problems: Heavy winter kill (3); These did not survive the first summer; Astrantia simply couldn't handle the summer here, and basically all plants died the first year; Yield per plant was quite low given the time and space used to produce them; None (mine decimated by gophers); A little short but not too short.

Notable insects/diseases: None (5).

Similar Cultivars: None (2).

Additional comments: I have purchased astrantia from Holland a few times as an accent flower for bridal work, I do like them as a cut, but will probably forgo producing my own as they were shy producers in our setting; We were very disappointed with astrantia's second year performance, we had also planted a full flat in addition to the Trial plants last spring, all were beautiful, with very promising blooms (still short and only 6-8 stems per plant), I had imagined them coming back stronger the second year, like most perennials do, however, what very few made it through the winter flowered sparsely and even shorter than the first season; Plants were very small and instead of growing them on prior to planting, I planted them out, they were overcome with weeds, then weeded and kept weed-free for the remainder of the year, but never gained sufficient size to make it through the winter; I really liked this one.

Postharvest handling: I seemed to need to harvest when the first flower had faded.

Eryngium '**Big Blue**'

Eryngium 'Big Blue'

Good qualities: Beautiful blue color (4); Holds up very well out of water, exotic/wildflower form that is in demand; More tall slender stems rather than the thick huge stems in other varieties.

Problems: 'Big Blue' is exceptionally sharp (2) - we worried about using them in bridal bouquets for fear of injury!!!; Very few come through our winters or summers, we've grown 'Big Blue' before, we often lose many of them through the summer (especially during times of wet), and then even more during the winter; Plants just never seemed to grow; Stinks when it gets mature; Not easy to handle and process; Only a few made it to the end of 2016, and the remainder died over winter, not hardy to zone 3.

Notable insects/diseases: None (2).

Similar Cultivars: No; I have grown eryngium 'Blue Glitter' and 'White Glitter' with decent results, I am not sure why these plants just seemed to stagnate, there are a few still alive, I might put them in pots and give intensive care for a while to see if they could do better next year; eryngium 'Blue Glitter'.

Additional comments: After 3-4 times of trying the larger-flowered eryngiums, we've decided they are not suited to our mid-Atlantic climate; Nicer looking than 'Blue Glitter', but too spiny to use, plant was slow to establish; I had only one alive still last fall, it was pretty enough but it didn't make through the winter.

Postharvest handling: We use a CVBN pill and Chrysal Prof 2.

Good qualities: Gorgeous form and texture (3); Easy to grow (2); Great filler for soft color palette, easy to harvest and clean, does not need staking; SUPER drought tolerant, prolific; Manageable height; Very vigorous! grew to over 7 feet tall; We cut flowers in bud; Does well in wet ground where other plants might suffer; Nice large flower; Long harvest window, big blooms.

Problems: A few plants looked a bit chlorotic, these were grown in fertile soil with no other nutritional issues in other perennials; When flowers open, looks messy, hard to hydrate; Very prone to mildew and insect damage, much more so than the native *Eupatorium* growing in the adjacent swamp, it bloomed a little later than the native; Open flowers browned quickly and were quickly chewed by the "corn beetle"; Kind of temperamental, flowers drooped easily if not cut at right time or handled properly.

Notable insects/diseases: None (3); The leaves were hit by mildew (we don't see mildew on any other crop), snail and some other unspecified insect holes; *Diabrotica barberi* is an omnivorous pest we are plagued with here in corn country!; Lots of room for corn root worm beetles to hide in the flower heads.

Similar Cultivars: No, but useful in a similar manner to green sedum, trachelium, ammi or other umbel-shaped flowers; This is similar to the wild type; No; It's a less useful version of the native *Eupatorium.*

Additional comments: Love 'Little Joe!' already ordered more plants!; We used

the flower heads in a tight bud state for the texture and dark pink color, they can also be used open; A really nice complementary flower with easy care.
Postharvest handling: There seems to be a definitive window for harvest—if harvested too immature, it does not last in a vase, if harvested when the florets are all the way open, it shatters and also does not last, we harvested when florets were in bud, but closer to opening/more mature, and obtained good vase life; Requires more postharvest experimentation than I did, I heard it was useful in bud form so I tried to harvest it in bud form, only to have it wilt; Harvest and hold in water.

Filipendula 'Venusta'
Good qualities: Easy to grow (2); Dried in fall as brown seed heads, it was amazing, created a great little hedge in my field; Pretty pink color and fluffy shape; Color and form are desirable, the size of the flower is a nice feature in a bunch; Tall, vigorous, and gorgeous dainty flower; Long harvest window, unique 'seed head'.
Problems: I had trouble hydrating it while fresh; Plant spread under plastic mulch and did not come up through last year's holes, not suitable for plastic mulch production; A questionable cut stem due to short vase life; It sheds from the moment it opens, might be useful for outdoor event work only, it's too messy to bring inside; During the fluffy pink stage I couldn't really get this one to hydrate, once the flowers were spent, they were a pretty bronze color which I liked.
Notable insects/diseases: No (2); Crop was completely destroyed by deer, leaving adjacent species untouched.
Similar Cultivars: Same color and texture as astilbe (3), but it lacks definition in flower head shape.
Additional comments: I don't think that it can be used as a main flower, because of the flower head shape; The filipendula did make a nice dried flower, dried easily and kept its color, I was able to use and sell more as dried material than fresh; After initial trials I gave up cutting it at all, the dried seed heads were more useful than the flower, but not worth the space, perhaps it could be cut in tight bud for a better result, but as soon as flowers open they shed.
Postharvest handling: I had trouble hydrating it while fresh, dried in fall as brown seed heads, it was amazing; Flowers and buds wilt after 2 or 3 days, if you re-cut stems they will revive.

Heucherella 'Art Nouveau'
Good qualities: Winter hardy, drought tolerant; Leaves were excellent in bouquets, boutonnieres, corsages, long lasting, good color, good size and petiole length for wedding work, robust grower in shady, moist conditions; Long harvest window, as flowers and buds held well on plant and were pretty for nearly a month, good event flower; Foliage is a winner; Easy to grow and nice color; If you need some small-ish leaves and can deal with the shorter stems they are pretty.
Problems: Way too short to use, leaves are pretty, however they are not tough/thick enough to use in boutonniere work; Plants thrived at a shady site but not in the sun; Flowers insignificant, need many plants for any significant statement; Delicate flower, plants didn't bloom till second year; The "flowers" are not very attractive; Leaves can wilt if picked at the wrong stage, only mature leaves hold well, only the biggest leaves are marketable, and have a limited range of usefulness in design work; No flowers but the leaves are pretty, but too short to be able to harvest and transport very efficiently.
Notable insects/diseases: None (4).
Similar cultivars: None listed.
Additional comments: Is not a useful cut flower/plant; We lost a lot of plants the first summer, and the plants don't look great this summer; Our florists and customers did not have a use for this plant; Leaves were beautiful and performed well for wedding work; Died quickly in my field due to irrigation leak and too sunny of spot; An excellent delicate flower for event work, but would get lost in a market bouquet, the leaves are also lovely, but only suited to an alternative palette, a bit lime-tinged for my taste; A fun little accent plant, but not a money-maker on our farm.
Postharvest handling: Quick dip leaves and hydrate overnight prior to use, Crowning Glory used in boutonnieres and corsages, long-lasting in water or foam; New growth is wilty, so pick large mature leaves only.

Physostegia 'Pink Manners'
Good qualities: Vigorous (2); Very nice flower form (2); Nice clear pink color (2); Does not need staking; This cultivar formed clumps, this was good in the plastic mulch system, in the past I have had the wild type spread and not come back through the holes in the plastic film; Nice glossy leaves, good upright form; Complements other summer flowers well, easy care and grows in partial shade; When the ugly flowers fell off the burgundy seed pods and bracts were quite attractive, not attractive enough to grow again though; Unique, new spike flower; Unique texture, also harvestable later in the summer as a pretty seed pod/spike thing.
Problems: Too early to tell if it is invasive; None, except a small amount of shattering/petal drop (not a significant amount); Difficult to determine when the stems are ready, florets quickly brown, needs to be cut when half or fewer florets are open; Didn't grow much bigger than last year, might need more space; They looked bedraggled from the moment the flower opened until they fell off, perhaps my situation was unfavorable but others in the same row and same soil were excellent, plants seemed healthy and vigorous but flowers were just unattractive; Short harvest window in flowering stage, it all comes on at once, color is not quite pink, not quite purple which can be hard to sell.
Notable insects/diseases: None (5).
Similar Cultivars: Physostegia 'Vivid'; No.
Additional comments: The color is a bit pale, I like the late flowering and brighter color of the 'Vivid' more than this one, time will tell if this one is more manageable as its name implies; After first flush was cut, stems grew back a lot shorter; A very pretty soft pink flower that looked great in airy/soft bouquets.
NC State conducted vase life testing of this cultivar; see article in this issue for details.

Stokesia 'Mel's Blue'
Good qualities: Beautiful blue color and form (4); Pretty easy to grow (2); Many stems produced; Large cluster of flowers, similar look/feel to asters in a bouquet, very tough, hardy plants; Strong growth in moderate soil, lots of customer appreciation, especially from those interested in native plants; Vigor; Unique; Unusual spidery flower, wonderful spray form so great for bouquets.
Problems: None—maybe wish it had more stems per plant, but the flower clusters were so large that I can't imagine the plant producing more!; Not hardy in zone 3, all died; Short and not a vigorous grower so it got weedy, flowers are too short for netting and flopped in the wind, we live in a wind tunnel basically and most everything needs netting; Not too popular for me; Did not produce much in year one, but year 2 was great!
Notable insects/diseases: None (5).
Similar Cultivars: Just in appearance to 'Matsumoto' asters, when used in a bouquet; No.
Additional comments: Produced many small stems, would be better if grown with fewer but taller stems; Love these!; The flowers close at night, but even closed they are still pretty, here they bloomed with a lovely mid blue color just in time for July 4th, very useful for patriotic bouquets; We like this stokesia very much, it keeps flowering and flowering, triggering more stems after harvesting the first flush, have had flowers still in October; Even produced little shorties in the late summer/fall, wish I had a whole row of these.
Postharvest handling: Vase life varied from good to very poor, not sure why, this flower closes at night; Cut and hold in water; We used Quick Dip in the field for hydration just to be sure; Chrysal Pro 2.

Trial Results for Year 2 of perennial cultivars. First row of data for each cultivar is the average and the second row is the range of responses. Note when only one response is listed in the range line, several trialers responded and all gave the same rating.

Species Cultivar	Plants died during winter (%)	Plants flowering (%)	Yield (stems/plant)	Stem length (inches)	Ratings[1]			Average vaselife (days)
					Market appreciation	Ease of cultivation	Grow again	
Astrantia **Roma**	**35.0**	**50.0**	**3.1**	**13**	**4.2**	**2.7**	**2.6**	**8.7**
	0-90	0-100	0-9	6-28	3-5	1-5	1-5	6-10
Eryngium **Big Blue**	**36.9**	**50.7**	**1.2**	**21**	**3.0**	**2.7**	**2.3**	**12.5**
	0-100	0-100	0-3	16-30	1-5	1-5	1-5	10-14
Eupatorium **Baby Joe**	**2.8**	**100**	**7.9**	**41**	**3.7**	**4.8**	**3.4**	**7.4**
	0-100	0-100	1-18	24-80	2-5	4-5	1-5	5-10
Filipendula **Venusta**	**3.6**	**83.8**	**2.4**	**46**	**3.2**	**3.9**	**2.9**	**1.8**
	0-15	10-100	0-10	24-72	1-5	1-5	1-5	1-3
Heucherella **Art Nouveau**	**29.9**	**50.0**	**6.2**	**30.0**	**2.0**	**3.8**	**2.0**	**6.0**
	0-100	0-100	0-11	4-24	1-3	2-5	1-4	5-7
Physostegia **Pink Manners**	**4.6**	**100**	**9.8**	**26**	**3.6**	**4.4**	**3.4**	**7.5**
	0-7	100	0-36	16-48	1-5	4-5	1-5	6-7
Stokesia **Mel's Blue**	**27.1**	**97.1**	**10.4**	**16**	**4.5**	**4.1**	**4.3**	**10.3**
	0-100	0-100	0-20	10-36	3-5	3-5	2-4	10-11

[1]1 to 5 scale, with 5 being the best. Market ratings are based on sales to wholesalers, retailers or final consumers.

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2017 NCSU Perennial Project Production and Postharvest

Nathan Jahnke, John M. Dole, and Ingram F. McCall
Department of Horticultural Science
North Carolina State University

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What a difference a year can make. Perennials usually get bigger and better! Nine of the ten perennials tested for cut flower production increased in stem yield and stem length compared to 2016. In the second year the average stem length for all species was longer than 12 inches, but the longest stems (those over 20 inches) were obtained from *Agastache* 'Blue Fortune', *Monarda* 'Jacob Cline', *Perovskia* 'Longin' and *Rudbeckia* 'Viette's Little Suzy'. All four were also quite productive in both number of stems per plant, and winter hardiness, as 94-100% of the plants survived to the second season. *Helenium* 'Ruby Tuesday', *Leucanthemum* 'Goldfinch', *Leucanthemum* 'Real Glory', and *Monarda* 'Cranberry Lace' were not included in this article because the average stem length was less than 12 inches.

Agastache 'Blue Fortune' is easy and pleasing to harvest with its long, sturdy stems and fragrance. It also fits well into small places in arrangements or provides height. The lighter color blends well with many other flowers compared to the bright purple of *Agastache* 'Blue Boa'.

Monarda 'Jacob Cline' is one of our favorites, because it is a great producer and it can be used in three different ways. First, stems can be harvested before flowers develop making the burgundy sepals the main focal point (Fig 1A). Second, if harvested just before full bloom, the bright red flowers look like fireworks against the burgundy sepals. Finally, you might be able to harvest the older seed heads (Fig 1B).

Fig 1. Above A. 'Jacob Cline' stem in full bloom with bright petals with burgundy sepals. B. Papery seed head.

An honorable mention is *Veronica* 'Charlotte'. The variegated foliage on this plant is a bonus and the second year performance was worth the wait. The first harvest of the season produced the longest stems. The spike flower works great with *Veronica* 'Tranquility' and other pink flowers like *Delphinium* 'Planet Pink' from this year's seed trial (Fig. 2).

Fig 2. Left Arrangement including *Veronica* 'Charlotte' and 'Tranquility' with *Delphinium* 'Planet Pink'.

The Details: Rooted liners were received from Ball Horticultural Company during spring 2015. Three blocks of 12-16 plants were planted, and cut stems harvested during the 2016 and 2017 seasons. Production data consisted of the number of stems produced that were equal or longer than 12 inches, and the length of the first 100 stems (≥12 inches) harvested from each block. Stems were processed for postharvest vase life tests by recutting all stems to a similar length. The following treatments were used for our postharvest trial:

1) Hydrator only (4 hours)
2) Holding preservative only (2 days)
3) Hydrator for 4 hours followed by holding preservative for 2 days
4) Tap water only (as a control)

Floralife Hydraflor 100 was used as the hydrator at 1.0 ounce per gallon, and Floralife Professional was used as the holding preservative at 1.3 ounces per gallon (the rates listed on the packaging). After treatment, stems were placed in tap water and held at 68 ± 2°F under approximately 200 foot-candles of light for 12 hours per day. The vase life for each stem was recorded. Termination point was typically when 50% of the flower(s) or florets on the stem were brown, wilted, drooped over, etc. This study helps us provide accurate information on how long these flowers will last, and how to increase vase life. These perennials will be held over one more winter to get a better handle on their hardiness in North Carolina.

Don't be afraid to give perennials a try. They can be a great supplement to your annual crops, providing some interesting colors and habits while reducing preparation included in buying seed, nurturing seedlings, planting, and tilling fields. For more information on our postharvest trials or production research check out past articles in *The Cut Flower Quarterly*, or go to our website: https://cutflowers.ces.ncsu.edu/.

Agastache 'Blue Boa'

	Year 1	Year 2
Yield (per plant)	21 stems	26 stems (+24%)
Average length	14 inches	15.5 inches (+11%)
Vase life (2016)	8 days tap, 9 days holding preservative	
Survival	60% of plants survived winter	

Notes
- 100% of plants bloomed
- Harvested with 1-3 flowers open
- Multiple harvests
- Fragrant with a floral mint scent
- Pollinator magnet

Agastache 'Blue Fortune'

	Year 1	Year 2
Yield (per plant)	43 stems	55 stems (+58%)
Average length	19.5 inches	22 inches (+13%)
Vase life (2016)	8 days tap, 9 days holding preservative	
Survival	94% of plants survived winter	

Notes
- 100% of plants bloomed
- Harvested with 2-3 flowers open
- First crop uniformly developed
- Long strong stems
- Multiple harvests
- Fragrant with scent of black licorice
- Long strong stems
- Pollinator magnet

Coreopsis 'Cerise'

	Year 1	Year 2
Yield (per plant)	N/A	35 stems
Average length	N/A	16.5 inches
Vase life (2016)	11 days regardless of treatment	
Survival	100% of plants survived winter	

Notes
- 100% of plants bloomed
- Significant improvement in production, stems were longer, straighter, and less branched
- Harvested when one flower of spray fully open
- Harvested over a few days (48 plants yielded 1,200 stems in 3 days!)
- Secondary flowers rarely open on cut stems and lose color if they do open
- Thrips deformed first flowers

Coreopsis 'Ruby Frost'

	Year 1	Year 2
Yield (per plant)	53 stems	1 stem (-98 %)
Average length	15 inches	13 inches (-15%)
Vase life (2016)	8 days regardless of treatment	
Survival	21% of plants survived winter	

Notes
- 100% of plants bloomed
- Majority did not survive winter
- Surviving plants were small and unproductive

Monarda 'Jacob Cline'		
	Year 1	**Year 2**
Yield (per plant)	9 stems	30 stems (+233%)
Average length	15 inches	23.5 inches (+57%)
Vase life (2016)	7 days in water	
Survival	100% of plants survived winter	
Notes	• 100% of plants bloomed • Plants spread from original planting • Unique flower shape and dark red sepals add extra color • Stems can break easily and may need support • Multiple harvests • Powdery mildew mid to late summer • Great for pollinators	

Perovskia 'Longin'		
	Year 1	**Year 2**
Yield (per plant)	23 stems	44 stems (+91%)
Average length	18.5 inches	20 inches (+8%)
Vase life (2016)	5 days regardless of treatment	
Survival	96% of plants survived winter	
Notes	• 100% of plants bloomed • Very fragrant • Flowers not super showy • Harvested when one flower was open • Multiple harvests	

Rudbeckia 'Viette's Little Suzy'		
	Year 1	**Year 2**
Yield (per plant)	13 stems	44 stems (+239%)
Average length	15 inches	21 inches (+40%)
Vase life (2016)	18 days with hydrator, holding, or hydrator plus holding, 12 in water	
Survival	100% of plants survived winter	
Notes	• 100% of plants bloomed • Harvested when color appeared on petals • Flowers continue to color and develop in vase • Stems can fall over with no support	

Salvia 'Burgundy Candles'		
	Year 1	**Year 2**
Yield (per plant)	8.5 stems	24 stems (+182%)
Average length	13.5 inches	14 inches (+4%)
Vase life (2016)	5 days regardless of treatment	
Survival	96% of plants survived winter	
Notes	• 100% of plants bloomed • Larger plants developed better, had more stems • Harvested with 1/3 of the spike fully open • First crop in spring and starts to bloom again during the cooler fall • Fragrant stems and leaves • Pollinator magnet	

Veronica 'Charlotte'		
	Year 1	**Year 2**
Yield (per plant)	4.5 stems	33 stems (+633%)
Average length	12.5 inches	16 inches (+28%)
Vase life (2016)	14 days with holding preservative	
Survival	96% of plants survived winter	

Notes
- Stem length drastically improved
- Harvested with 1/3 of the spike fully open
- First crop consisted of long, sturdy, uniform stems
- A few stems reverted to green leaf pattern
- Stem length was reduced after multiple harvests

Veronica 'Tranquility'		
	Year 1	**Year 2**
Yield (per plant)	13 stems	39 stems (+200%)
Average length	13.5 inches	15.5 inches (+15%)
Vase life (2016)	11 days regardless of treatment	
Survival	100% of plants survived winter	

Notes
- 100% of plants bloomed
- First crop developed the longest, sturdiest stems
- Responded well to multiple harvests
- Some flower tips became fasciated
- Pollinator magnet

Postharvest Treatment of Specialty Cut Flowers

North Carolina State University Report for 2017

Cristian Loyolla, John Dole, Ingram McCall, and Ben Bergmann
Department of Horticultural Science, North Carolina State University

This project was supported by the Association of Specialty Cut Flower Growers Research Foundation and numerous suppliers.

Every year we conduct vase life studies on promising species and cultivars from the ASCFG Seed and Perennial Trials. We had 30 varieties in the National Seed Trial, five new unnamed sunflowers trialed only here at North Carolina State, and seven species in the Perennial Trial. Of these we tested the vase life of 25 cultivars. It was a busy year!

Sunflowers made up the largest segment of the Trial this year with 11 different cultivars tested. Although we did not see much statistical difference between the treatments, vase life was longest for most cultivars with the use of a holding solution, and for some the best results were obtained with using a hydrator before the holding solution.

Previous testing has shown us that lisianthus generally does best with a holding solution and this year was no different. 'Rosanne 1 Black Pearl' and 'Rosanne 1 Green' vase life significantly increased when they received both holding and hydrator treatments. Lisianthus 'Rosanne 2 Deep Brown' also performed well with a holding solution, although previous treatment with a hydrator slightly reduced vase life.

Hibiscus 'Mahogany Splendor' has become quite a popular cut foliage, but many growers have had issues with postharvest handling. It responded very well to a hydrator after harvest, increasing vase life by three to five days, and reducing the chances the stems would wilt within the first couple days.

The Details

Field-grown flowers were harvested into tap water (0.21 EC, 6.1 pH) at the optimum stage of flower development. Stems were sorted into four equal groups and placed in the treatments below for the specified time, then placed into vases of deionized water.

- Hydrator only (4 hours)
- Holding preservative only (2 days)
- Hydrator for 4 hours followed by holding preservative for 2 days
- Tap water only (as a control)

Floralife Hydraflor 100 was used as the hydrator at 1.0 ounce per gallon, and Floralife Professional was used as the holding preservative at 1.3 ounces per gallon (the rates listed on the packaging). After treatment, stems were placed in tap water and held at 68 ± 2 oF under approximately 200 foot-candles of light for 12 hours per day. The vase life for each stem was recorded. Termination point was typically when 50% of the flower(s)/florets on the stem were brown, wilted, drooped over, etc.

What Are Hydrating and Holding Solutions?

Some of you may be asking, "What is a hydrating and holding solution?" Floral preservatives can be categorized as either hydrating, holding, or vase solutions. Holding solutions contain a carbohydrate source (sugar) to encourage bud opening and/or flower longevity, and are applied for several hours up to approximately two days either by growers or wholesalers before they get to the final consumer. Hydrating solutions are meant to be applied right after harvest, prior to a holding solution, to facilitate water uptake and do not contain a carbohydrate source. Hydrating solutions are usually used for a short amount of time, such as four hours. Vase solutions are generally applied by the

consumer, commonly sold in those little packets, and contain a higher concentration of carbohydrates than a holding solution. While we do not test the use of vase solutions in these studies, it would be safe to assume that those flowers that perform better with a holding solution would likely last longer for your customers with a vase solution.

One More Thing

Our testing methods tend to produce the maximum vase life, which tells you the potential vase life of each species. We cut and process the stems rapidly, put one stem per jar, and use a postharvest evaluation temperature that is a bit cooler than a typical home in a southern summer. These procedures were set up to provide a consistent environment so that anyone else should be able to repeat our work and get the same results. These factors combined typically add about one to three days to the vase life of some species compared to what a grower would usually get. It is also important to note that these results do not replace in-house testing as there are many on-farm factors that affect vase life.

The Results

***Campanula rapunculoides* 'Campbell Blue'** There were no significant differences between the treatments. Vase life in general was a bit on the short side, averaging 6 to 9 days.

'Campbell Blue'

Dianthus 'Deep Maxine' Flowers treated with only a holding solution had a slightly longer average vase life (15 days) than untreated flowers (14 days).

Dianthus 'Magenta Bicolor' Flowers treated with both hydrator and preservative had the longest vase life of 15 days, followed by the untreated flowers at 14 days, and flowers treated with only a hydrator at 12 days.

Dianthus 'Pink Magic' There was only a slight increase in vase life of 14 days for flowers that received both hydrator and holding solutions, compared to 13 days for those treated with only a hydrator.

Hibiscus 'Mahogany Splendor' This cut foliage responded very well to treatment with a hydrator, which increased vase life to 18 days from only 13 to 15 days without a hydrator. Treating the stems with hydrator decreased the likelihood they would wilt within the first couple of days. Interestingly, the stems started to root after about two weeks in the vase, which was too late, of course, to prevent the wilting that occurred after harvest.

'Deep Maxine'

'Magenta Bicolor'

'Pink Magic'

Lisianthus 'Rosanne 1 Black Pearl' Flowers treated with both hydrator and holding solution had the longest average vase life (14 days) followed by flowers treated only with a holding solution (13 days) or only with hydrator (12 days). Untreated flowers had the shortest vase life (9 days).

Lisianthus 'Rosanne 1 Green' Flowers treated with both hydrator and holding solution had the longest average vase life of 16 days as compared to 12 days of flowers without any treatments or just a hydrator.

Lisianthus 'Rosanne 2 Deep Brown' Flowers that were treated with only a holding solution had the longest vase life of 15 days, but flowers treated with a hydrator as well had a vase life of 14 days. Both of these were significantly longer than untreated flowers (10 days).

'Magogany Splendor'

'Roseanne 1 Black Pearl'

'Roseanne 1 Green'

'Roseanne 2 Deep Brown'

Marigold 'Oriental Gold' Interestingly, flowers without any treatments or with both treatments had the longest vase life (22 and 20 days, respectively). This was significantly better than the flowers treated with hydrator or holding solution alone, at 18 and 19 days, respectively. In general, most marigolds perform best when treated with a holding preservative.

Marigold '888 Deep Gold' Flowers treated with a holding solution had the longest vase life (15 days). Flowers treated with only hydrator (11.8 days) had the shortest vase life. Untreated flowers had a vase life of 14 days.

'888 Deep Gold'

'Oriental Gold'

***Penstemon hartwegii* 'Arabesque Appleblossom'** In general, this flower had a very short vase life. The longest was 5.5 days when flowers were treated with just a holding solution. Without any treatment it had a vase life of only 3.9 days.

Physostegia 'Pink Manners' Flowers treated with only hydrator had a longer average vase life (12 days), compared to those treated with both a hydrator and holding solution at 11 days.

'Arabesque Appleblossom'

'EH16-10'

Snapdragon 'Maryland Dark Orange' Flowers treated with a holding solution displayed a slightly increased vase life to 10 days. Untreated flowers had a vase life of 9 days.

Sunflower 'EH16-10' Flowers treated with only a holding solution had a slightly longer vase life (14 days) than flowers that received both treatments (13 days). Untreated flowers lasted 12 days.

Sunflower 'EH16-13 Flowers treated with only a holding solution had a slightly longer vase life (16 days) than those treated with both hydrator and holding solutions (15 days). Untreated flowers or those treated with only a hydrator had a vase life of 14 days.

Sunflower 'EH16-21' There were no statistical differences between the treatments, and vase life averaged about 12 days.

Sunflower 'EH16-21L' There were no statistical differences between the different treatments, vase life was around 13 days.

Sunflower 'EH16-30L' Flowers treated with both hydrator and holding solution had a slightly longer vase life (11 days) than untreated flowers (10 days).

Sunflower 'ProCut BiColor DMR' The longest vase life was achieved by flowers that received both hydrating and holding solutions (11 days). The rest of the treatments produced a slightly shorter vase life of 10 days.

Sunflower 'ProCut Orange Excel' There were no statistical differences between the treatments. Vase life averaged around 11 days.

Sunflower 'ProCut White Lite' Flowers treated with both hydrator and holding solutions had the longest average vase life (13 days) compared with 12 days for the non-treated flowers.

'Pink Manners'

'Maryland Dark Orange'

Sunflower 'ProCut White Nite' There were no statistical differences between the treatments, with vase life averaging around 13 days.

Sunflower 'Sunfinity' There were no statistical differences between the treatments; vase life was about 9 days.

Sunflower 'Vincent's Choice Deep Orange DMR' There were no statistical differences between the treatments, with vase life averaging around 11 days.

Stokesia 'Mel's Blue' There were no statistical differences between the treatments. Vase life averaged around 11 days.

'Mel's Blue'

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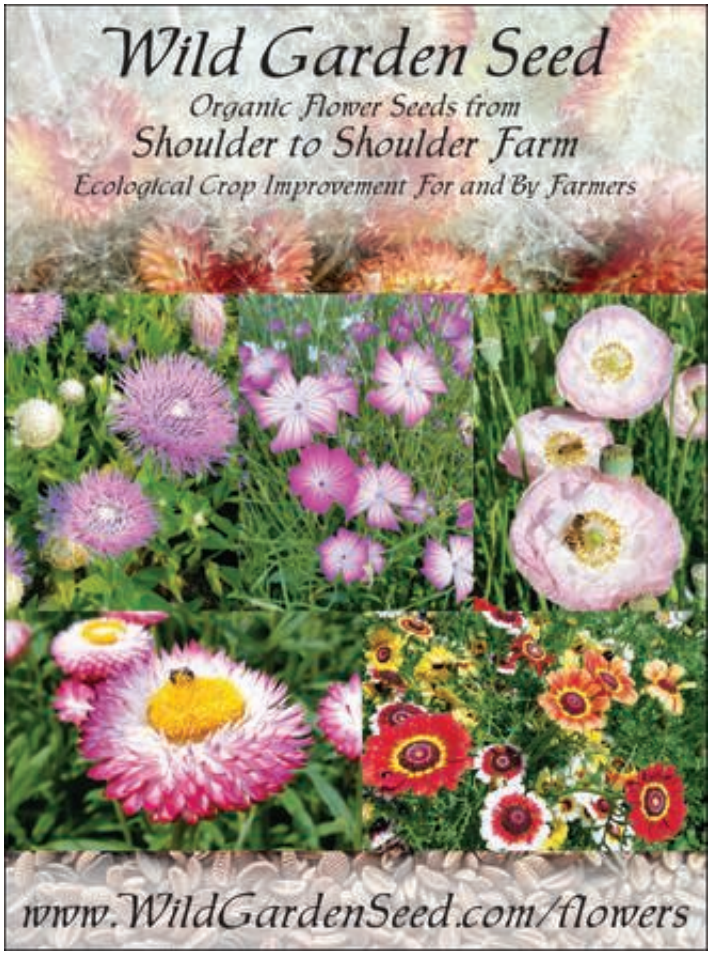
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Many of you have discovered the beauty of Italian ranunculus and anemone, but what you may not realize is the potential of extending the growing season with these cut flower crops. Pre-rooting is the answer. Italian ranunculus are grown mainly in Sicily (the southernmost part of Europe), where spring comes early and temperature are hot and dry in May and June, when bulbs are harvested.

Bulbs are kept warm and dry during selection, packing, and shipping, and remain so until they're are awakened by a long soak. This can be done as early as September with freshly-harvested bulbs, earlier with those we've kept from previous harvest.

Soaking and Pre-sprouting

The best way to activate bulbs is to soak them. This pre-germination stage should take place as follows: Soak or shower the bulbs for 4 to 6 hours. To maintain oxygen levels, slow running water, or a change of water during the process, are recommended. Water temperature should not be higher than 55F (12.5C). After this initial soak, soak bulbs for an additional 2 minutes in a preventative fungicide. Anemones may be given a second soak as the skin may sometimes be too thick. A longer soak may cause rot or damage due to a lack of oxygen.

Fall never comes overnight, so after the soak store the bulbs moist, but not wet, in a perforated bag, or in crates of vermiculite, peat and/or washed coco-coir. Orient the bulbs so that all sprouts face up during the germination process or turn bags over after a few days. Store for two weeks at 55F (12.5C). Keep the bulbs from drying out—moist but never wet.

Following two weeks of pre-sprouting, sprouts and roots will be about one inch long. Bulbs can be planted at that point, but when temperatures in greenhouse are still too warm, bulbs can be kept for another week or two at 48F (9C). Preferably, turn the bulbs around so all sprouts have been facing up during the germination process.

Season Extension

If outside (soil) temperatures are still too warm, these sprouts can be planted in #72 cells or pots and kept in a cooler or cool room for about another two weeks. A very limited amount of light is required. Plant sprouts just below the surface. Keep the soil moist, but not wet, to avoid rot. The ideal storage temperature is around 48F (9C), and humid but not wet. After the soak, the bulbs are literally swollen with water. Planting them in a just-moist medium encourages them to root out in search of water. During the pre-sprouting period, check the sprouting medium to ensure proper moisture levels and discard any bulbs showing signs of mold or rot.

After two weeks, young plants need to be planted in a bright greenhouse or tunnel. Soil temperatures need to remain below 55F (12.5C) through the growing cycle. Long periods of warmer soil temperatures will trigger the plant to die back into dormancy.

By providing this "chill period", bulbs can be planted much earlier than "normal". If October 1st would be the normal time when soil temperatures can be kept below 55F easily, this process can be started up to 6 to 8 weeks prior. Your production should start about a month earlier than "normal".

To further extend the season, we suggest using a larger-sized Italian ranunculus (5/7cm) and start them as mentioned above. Make sure to plant the bulbs or plants in raised beds with good drainage. In order to succeed, soil temperatures are to remain as cool as possible (below 55F/12.5C). Soil can be cooled by providing shade and cold water irrigation. Irrigation early in the morning is recommended so the cold water keeps the soil cool.

Please note that this will work only if you grow in an area where night temperatures naturally dip down below 55F during the growing season. If temperatures remain well above 60F, artificial cooling is required.

LA Hybrid Lilies

The LA hybrid lily, the cross of a Longiflorum (cut Easter lily) and an Asiatic lily, can be grown in many different climates and can even be considered a perennial in the southern states. The flowers are large, though not fragrant, and come in many colors and shades. Onings is a frontrunner in the lily industry and carries a large selection of lilies (www.onings.com) but we could not believe that ASCFG growers can still make money growing lilies with bulbs that cost well over $.50 each. Costs of packing in small packs is just very expensive, and if bulbs are not stored properly, freezer damage and yield loss may occur.

We have found a good alternative, based on the success of a group of European you-pick flower farms which buys lily bulbs from our Holland office. As a collective, we handle their large order of mixed LA hybrid lilies—a crate of 400 bulbs of size 12/14, of 13 varieties in six colors. The processing cost is much lower while bulbs are handled and stored properly.

While planting the 400 bulbs at the same time, flowers are picked over a 3 to 4 week period. By planting a crate more every 3 weeks, you can have a continuing flow of LA lilies. All varieties are strong performers with a good bloom count, suitable for pretty much all climates, for field and/or greenhouse. Onings America is more than happy to provide you with growing information, suggestions and advice.

Future Items

Onings definitely feels the "buy fresh locally-grown flowers" effect by the growing demand for specialty items. Therefore we are constantly on the lookout for exciting new and improved flowers and plant material. Besides Italian Cloni® Pon Pon, Success and Elegance ranunculus, Mistral+® anemone, Colibri® poppies, and lilies from Holland, Chile, and New Zealand, Onings America also offers a line of specialty bulb and tuber items such as Delux dahlia, fancy tulips, and daffodils as well as Captain's callas. We simply try to source the best there is. A few other exciting items we are working on are peonies, Italian hydrangea, and Italian Picello Dolce®; the Italian sweet peas.

Follow us on Instagram www.instagram.com/oningsamerica.
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Dannielle Swan, Field to Heart

Jodi Helmer

Edible Flowers Expand the Palette for the Palate

Dannielle Swan was flipping through seed catalogs, picking out the flowers she wanted to grow on her Field to Heart farm when descriptions of edible flowers captured her attention. Intrigued, she ordered several varieties and planted them alongside rows of cut flowers on her Snohomish, Washington flower farm.

Field to Heart has featured edible blossoms ranging from nasturtiums and pansies to gem marigolds and carnations since 2013. During that time, Swan has earned a reputation for growing flowers that are both colorful and flavorful.

"A lot of cut flowers are edible but it's great to see the flavors of these flowers getting more attention," she says. "Since edible flowers are a new trend, it's still an experimental process but it's spurred me to buying more seeds with dual functionality."

As the popularity of edible flowers blossomed, the perfumed petals have moved from garnishes on the side of the plate to colorful main ingredients.

Swan sells edible flowers to local restaurants and bakeries, including The Pink Door and Pacific Northwest Cupcakes, where the colorful blooms are used in everything from salads and pastas to cakes. When the Slow Flower Summit was held in Seattle last summer, Swan supplied pansies, violas, and nasturtiums for specialty cocktails.

Between June and September, Field to Heart also offers Community Supported Floriculture (CSF) shares that include weekly packages of edible flowers as well as cut flower bouquets.

Beautiful AND Edible

Though there are countless edible flower varieties, Swan has a few favorites. She recommends 'Painted Lady' scarlet runner beans in shades of pink, red, orange, and white as whimsical additions to salads; the colorful petals from bachelor buttons as decorative accents on cupcakes; and the sweet, spicy taste of 'Lace Perfume' carnations added to anything made with chocolate.

"Edible flowers are a decorative and a sensory experience," she explains. "It's exciting to see more people developing an interest in them."

As interest has grown, so has the farm.

Dannielle launched Field to Heart on one-eighth of an acre of land where she grew a mix of edible and cut flowers, selling bouquets, CSF shares, and fulfilling orders from wholesalers and retailers. In 2017, she moved to a farm with a one-acre garden plot and low tunnels for season extension; plans to add at least one high tunnel will further expand production of both cut and edible flowers.

A larger space requires a lot more work to manage—and Swan is still working on embracing a less manicured farm.

"Farming flowers is a lot of work," she says. "Once you have systems in place and get organized, it gets easier, but moving to a bigger place threw things off for us a little and we're working to get back on track.

Field to Heart is not certified organic but, because several varieties of their flowers are grown to be eaten, Swan does not use any chemicals so keeping on top of pests and weeds requires extra attention.

"We want to focus on growing fantastic flowers, and that means we sometimes have to put on blinders and ignore the weeds, or spend more time figuring out how to deal with things like thrips," Swan adds.

Wholesale Works for Edibles

Focusing on wholesale business helps manage the workload.

"I like the practice of wholesale," Swan says. "There is a lot less legwork [than direct-to-consumer] because we can do a bulk cut and hand it over and we can get a lot more product to the wholesale market at once."

Almost two-thirds of the flowers grown on Field to Heart farm are sold via wholesale channels, including the Seattle Wholesale Growers Market.

But wholesale has its challenges. Because Swan is not a member of the Seattle Wholesale Growers Market, the flowers are offered on consignment and unsold blooms must be marketed via other channels. Swan developed relationships with a local co-op that purchases her flowers; others are bundled into bouquets for CSF customers.

For Swan, the other "challenge" of having more space is much more fun: She is tasked with choosing which flowers to plant. In addition to edible and cut flower favorites, Swan likes experimenting with new varieties.

This season, Swan planted buzz button, *Acmella oleracea*, an edible annual with a bright yellow bud and a tart flavor that causes the mouth to "buzz" when it's consumed; 'Seaton's J'Adore' carnations; and bunny tail grass. All three were a hit. In the future, she plans to plant a witch hazel orchard, featuring the shrub in bouquets and as an edible medicinal plant.

As Swan learns more about edible flowers, she learns from past mistakes and tweaks her approach to make smarter growing decisions—and in the process, she enjoys every day she spends working on the farm.

"I'm always looking for new things to grow, and am always inspired by the flowers I'm growing." she says.

Jodi Helmer is a freelance writer in North Carolina. Contact her at jodi@jodihelmer.com

Why Innovation Matters

Gay Smith

Innovation is the source of economic growth. The discovery of new products, new methods, and procedures enhances logistics and makes our lives better by improving productivity. But often, old habits undermine change. Who hasn't gotten the "We've always done it this way." response when recommending a change? Change is tough to embrace. It can feel prickly, and definitely requires an open attitude on the risk to succeed or fail.

Change in the flower industry comes about slowly, but clearly, as innovations are moving us forward. How about tinting potted *Phalaenopsis* blooms blue? Most consumers can't even say "phalaenopsis", but those blue flowers make them take a second look. The patented tinting process was developed in Holland, and Silver Vase introduced 'Blue Mystique' at TPIE (Tropical Plant International Expo) in 2011. Supermarkets report that blue orchids outsell natural color orchids regardless of their higher price tag. Cut flower breeders are also busy with new introductions. A pure white sunflower is close to being commercially available. The branching alstroemeria series 'Charmelia' has been well received and is available now. Maybe you've noticed hot pink 'Princettia' poinsettias featured in traditional holiday plant displays. Other innovations include atomization—machines that grade, position, bind, wrap, and blow UPC stickers onto sleeves.

Speaking of innovations, the popularity of hands-on design events and farm dinners is impressive. Flower-focused design workshops and farm dinners, including American Grown's Field to Vase and Canada's Petals and Plates weave together the beauty and interesting stories about flower origins and production specifics for consumers and professionals alike. Through the tireless efforts of the California Cut Flower Commission, Debra Prinzing, several ASCFG farms, and other domestic growers, dinner party enthusiasts are introduced to flowers grown in their area as well as the people growing them. Today's consumer is looking for "story" as part of the retail experience and these flower-focused events deliver 100%! Destination dinners have introduced hundreds of consumers to the details and minutiae involved with offering a wide diversity of blooms to decorate, add color, and (sometimes) convey sentiments more effectively than words. The American Grown dinner parties was named the SAF's "Marketer of the Year" in 2017. Hearty congratulations and thank-you to the grower-hosts of these public relations extravaganzas.

Gay's "Chrysal" Ball

What's hot for 2018? Design shows are highlighting blooms outside of mainstream standbys. For example, gloriosa lilies and clematis were featured in the 2016 SAF trends program. Resendiz Brothers of Fallbrook, California have put protea on the map by highlighting different designs featuring cool foliage and interesting combinations of these challenging blooms. Eryngium, echinopsis, clematis, and tweedia are featured in wedding magazines offering cool textures of natural blue flowers easy to pair with grey tones. Designs built on armatures of branches, vines, berries, pods, and grasses show no sign of waning popularity. Wedding and floral trade magazines highlight peonies, garden roses, Italian ranunculus, and dahlias.

Before I give treatment recommendations, please know that I work as the Technical Consulting Manager for Chrysal Americas. Other companies offering postharvest solutions use different ingredients and formulations, therefore, I strongly recommend comparing like solutions to determine which give best results in your water and environmental conditions.

When it comes to processing, one approach is to categorize flowers into five basic groups: ethylene-sensitive blooms, "dirty" flowers, wilt-sensitive, blooms in the bulbous family, and sugar-lovers. Let's start with ethylene-sensitive types*. If you want additional information on sources of ethylene and its deadly effects on flowers and plants, please reference my past columns in the *Quarterly*.

Briefly, exposure to ethylene gas kills flowers. A minute amount of the gas causes premature death, distorts bloom opening, causes leaves and flowers to fall off stems, and results in premature leaf yellowing. Don't get too excited about

growing delphinium, sweet peas, larkspur, gyp or scabiosa unless you live in Florida, California, Minnesota, Washington and Texas. Why? Because these flowers are very sensitive. They die super fast if not protected with STS in postharvest. Silver thiosulfate (STS) is a systemic solution that blocks ethylene receptor sites for entire life of the flower or plant. The states listed above have an EPA registration for STS use on flowers (systemically) and plants (foliar spray). STS contains silver—it must be neutralized before disposing spent solutions. Chrysal's STS product is sold as Chrysal AVB.

Who Should Get What?

Are you leaning towards marigolds, gerberas, or white sunflowers? If so, consider preparing buckets with a gerbera pill. For blooms that foul the water fast or are very sensitive to bacteria in water, the gerbera pill ensures stems receive a first drink of super-clean water. The pills also work great with daffodils, cut hyacinth, and cut foliage. Generally speaking, sugar in flower foods can stimulate leaf yellowing in cut foliage, so after 4 hours (minimum) up to 3 days (maximum) in gerbera pill water, transfer stems into a holding solution for the energy needed for bloom opening and longevity.

If your cut flowers start life inside a bulb, tuber, rhizome or corm, the flowers are considered part of the "bulbous" family. Bulbous blooms will thank you for using bulb food because bulb food rebalances the chemistry that gets whacked-out at harvest. Look for food specially formulated for bulbs. Follow mixing instructions and prepare buckets with cold water. Bulb T-bags prevent premature foliage yellowing, maintain the color vibrancy and improves vase life by more than 50%.

What about the wilt-sensitive category? Hydrangeas, veronica, garden roses, gloriosa, and clematis are just a few. Flowers in this group beg for a boost to kick-start flow. Hydration solutions super-charge stem flow and turn on the plumbing system. Formulations like Chrysal Professional 1 or Floralife Hydraflor contain no source of glucose or other sugars, so once blooms fill (4 hours to 3 days), it is important to transfer stems into flower food. The flowers need supplemental energy for bud-opening.

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Finally, sugar-loving flowers include protea, callas, peonies, and glads. Process these blooms in a flower food from harvest to consumer vase. Holding solutions are recommended because of their versatility—these formulas contain minimum amounts of sugars so flowers firm up and hold, but don't blow open too fast.

*Send me an email if you'd like a flower and plant ethylene-sensitive list.

Gay Smith
is the Technical Consulting Manager for Chrysal USA.
Contact her at gaysmith@earthlink.net

The Farmer and the Florist

Keep Your Customer Satisfied—Every Week

Ellen Frost and Laura Beth Resnick

Any easy-to-read availability list could mean the difference between making an order and missing an order. Each week, most florists purchase flowers from wholesalers in addition to farmers. For many of your clients, the availability list is the only contact they'll have with you. It's worth the time and effort each week to make your list a reflection of the great work you do.

The Look

It's never too early to show your customers that you're an expert in your field. Even in your first year of business, you can start with a professional-looking availability list. If you don't have the funds to pay for a program like Shopify, you can use Google Drive, Microsoft Office, or MailChimp. A polished availability list is organized, free of typos, has a font that's simple and large enough to read without squinting, and says who you are.

Many growers have fairly small quantities of product, which can be tricky to handle on an availability list. When Laura Beth started her farm, she was growing on a tiny urban plot. She got a maximum of about 25 sellable stems from each crop. It looked silly to list 2.5 bunches of sunflowers on an availability list, so she used stems as the unit instead. Twenty-five stems looked a lot more bountiful on paper than 2.5 bunches.

It's perfectly fine to use stems as the unit on your availability list, but keep in mind that the majority of florists are used to bunches, with a standard ten stems per bunch. Buying from local farmers is much more appealing to florists if farmers' availability lists don't differ too much from what the wholesalers' lists. Laura Beth switched over to bunches in her fifth year, when she had enough product that she could offer at least five bunches of any given crop.

Photos are definitely a plus on availability lists. It's possible that your clients or potential clients may not be familiar with some of your more unique products. A photo or a link to a photo of the crop will make it easier for your florists to accurately choose what they need. Additional details such as stem length, number of stems available, and any other pertinent info ("Fragrant!" "Without foliage!" "Branching!") should be included.

The Timing

The earlier you can send your availability, the better; many florists would love to know what you have months out! Next season, Laura Beth will email her availability on Tuesdays at 7:00 a.m. for delivery the following week. That way, she can create the list on Monday afternoon, type it up Monday evening, and hit "send" the next morning. She often sends an additional email later in the week with updated availability. Jessica Todd from Cut Flowers by Clear Ridge (Maryland) sends her list by 3:00 p.m. on Tuesdays; Maya Kosok from Hillen Homestead (Maryland), and Barbara Lamborne from Greenstone Fields (Virginia) both send theirs on Wednesday afternoons or evenings. Tuesdays and Wednesdays are the general consensus here!

Estimating what will be ready for cutting over a week in advance is an acquired skill, but one thing is always certain: it's best to under-promise and over-deliver. That means that if you're pretty sure you'll have ten bunches of champagne ranunculus, you should list that you have only eight. You can always send a follow-up email asking if a florist wants a few more bunches of those lovely peachy blooms—chances are, the answer is yes. On the flip side, it can send florists into a panic when you said you would have ten bunches but bring only eight.

The Reality

These guidelines are a great place to start, but ultimately each farmer has a different style, and each florist has unique expectations. If you're not sure what your customer wants, simply ask! Schedule a meeting, treat her to a latte, and ask: What can I do to make buying from me easy? What would make my availability list clear and concise? Am I sending it on a convenient day for you?

You won't be able to please everyone, but communicating with your florists (or rather, listening) will give you a broad picture of what will best suit their needs. Remember to ask for feedback during florists' down times: January and July are typically the slowest months here in Baltimore, so that's a good time to reach out. And, being open to constructive criticism isn't easy, so treat yourself to a latte too!

Ellen Frost is owner of Local Color Flowers
Contact her at ellen@locoflo.com

Laura Beth Resnick is owner of Butterbee Farm
Contact her at butterbeefarm@gmail.com

Scale Insects of Cut Woody Stems: Biology and Control Options

Stanton Gill

Many cut flower growers have developed markets for cut stems of woody plants. This is a good strong market to enter as demand appears to be healthy. Production is a little like growing in an in-ground nursery, but instead of harvesting the whole plant, you cut off the stems and sell them for either their flowers, stems, color or shape, or in some cases for the beautiful bracts that form.

Many shrubs and trees are susceptible to a "low-key insect group" called the scale insects. They tend to blend in on the plant and go unnoticed until they have built up to damaging levels. Control at high infestations levels is very difficult. In 2012 I published an article on one of the nastiest of the armored scales, called Japanese maple scale.

Over the last five years I have seen a steady increase in damage caused by several species of soft and armored scales. This is a timely lesson for you to learn to recognize and deal with this pest group before they build to uncontrollable levels.

To prevent losses in your business you need to understand the pest you are dealing with before you attempt a control strategy.

Scales, as a group, are one of the most significant arthropods in terms of their detrimental impact on an extremely wide range of woody plants. There are more than 8,000 described species in seven families. They were previously classified in the order Homoptera, but are now listed in the order Hemiptera, suborder Sternorrhyncha, and superfamily *Coccoidae*.

Fortunately for cut flower growers, only two major scale families cause 95% of the plant loss in temperate regions. The two families we will discuss in this article are the armored scales in the family *Diaspididae,* and the soft and wax scales in the family *Coccidae*.

It's often difficult for the untrained eye to detect scale because they don't look like a typical insect. They tend to blend in with the plant tissue or overwinter in buds. They are small, sometimes flattened or raised into shapes that look like part of the plant, often with various colors that blend in with the bark or leaves. This ability to blend is part of their survival mechanism.

Scale Biology

Scales show high degrees of sexual dimorphism: the two sexes of the same species exhibit different physical characteristics not related to their sexual organs. Males, which are not produced in all scale species, actually look like insects in the sexual mature stage of development, possessing one pair of wings, as opposed to the usual two paired wings on most insects. (Other species of insects with just one pair of wings are in the order Diptera, which contains flies and mosquitoes.) The males are present for a mere 12 to 24 hours, with the sole purpose of finding a female with which to mate.

Females of most scales are immobile in the mature stage, and retain the immature external morphology even when sexually mature. They produce a pheromone that attracts the male. Upon finding a female mate, the male uses its antennae to drum on top of the female. If the female finds the beat alluring, mating will occur.

For scale species with males, the males will mate with a couple of females and die shortly afterward, having depleted their energy reserves. The female lives up to several months as her eggs continue to develop. This length of survival depends on the species and the time of the year. If she is an overwintering species, she will live until the next spring, at which time she will lay eggs that will hatch the following fall. Some species have one generation per year while others have multiple generations per year. A scale in a southern climate may have more generations than the same species damaging plants in a northern location. Scale insects in tropical areas can have multiple and often overlapping generations year round.

Several of the scales called soft scales do not produce males, and the females reproduce without mating. This is called parthenogenesis.

Soft scales and wax scales have their waxy covers integrated into their bodies. Most soft scales in temperate climates overwinter as immature females. Female soft scales tend to be rather flattened in profile and oval in their perimeter shape in winter. In spring or early summer, their bodies will swell as eggs develop. This causes the waxy cover to swell up in raised profile. Soft scales feed on the phloem of the plant, extracting plant juices. They feed heavily as eggs develop, often excreting large quantities of honeydew, a sticky sap that covers anything underneath the plant. This honeydew can be used for detection of a soft-scale problem on a plant.

Some armored scales overwinter as immature, but some overwinter as pregnant females ready to give birth in spring or summer. Eggs develop under the armored scale without the very obvious swelling that occurs in soft scales. Armored scales in general lay upward of 100 to 300 eggs per female.

For both armored and soft scales, the stage that follows is called the crawler stage. The first instars (stages) of most species emerge from the egg with functional legs. They immediately crawl around in search of a favorable spot to feed. In some species they delay settling down, but no longer than 12 to 24 hours.

Sometimes they are blown away by wind onto another host plant, where they may establish a separate colony.

Identifying Scale

You can often distinguish an armored scale from a soft scale by trying to pry off the cover. With armored scale, the outer cover is hard and if you pop that cover off it comes completely free. Many armored scale female bodies, once the cover is removed, are yellow, orange or purple in color. The body and cover of soft scale insects are integrated and the cover does not come free easily, or at all, without destroying the insect.

The first two instars of male armored scales look just like the females. Males stop feeding after the second instar and excrete a substance out of their back called a carneae, made out of white wax. This carneae provides protection for the developing body of the insect. They continue to grow through a third, fourth, and fifth instar before emerging as an adult, with a more typical insect appearance.

At the third instar stage, the female forms a cover. The shape of the cover can be round, oval, pear-shaped or oyster shell-like. She continues to feed through all the instars, with a piercing, sucking mouth part inserted into the plant. At maturity, the female does not have a typical insect appearance.

Most arborists identify scale by its female cover and the plant species it is found on. Work with the Extension entomology specialist in your state to help identify difficult-to-recognize scales. It is critical to correctly identify the species to determine when the crawler stage is active. The crawler stage is often the best stage to control. Learning to identify the various scales may take some time, but realize that by properly identifying the scale you can develop the best control strategy.

Control

As mentioned above, the most effective control of scales is achieved during the crawler stage. This is the period when the young insects have the least protection. Crawlers are often oval, have antennae and legs, and look like typical insects, but are very small. Depending on the specific scale, they have different crawler periods, from May through fall along the Mid-Atlantic United States. Some have one generation of crawlers per year, while others have two and some three.

While the scales are in the crawler stage they are very susceptible to insecticides. This is when most scale predators and parasites are active. With the number of predators and parasites attracted to the crawlers, it is important to select control materials that have minimal impact on beneficials. Several different materials have been used over the years to control scale. Pyrethroids such as bifenthrin and permethrin products are inexpensive and effective. Unfortunately, many of these are broad spectrum and kill beneficials. The preferred control for scales is an insect growth regulator, or IGR. IGRs impact the early instars; death isn't immediate so it won't act like a pyrethroid with a quick kill.

IGRs disrupt the development of the exoskeleton. Hormones in their body tell the insect to form a new layer of skin and shed the old one. The synthetic growth regulator mimics natural hormones. Upon entering the next instar, the hormones go a bit crazy and the insect can't shed its old skin, resulting in death. It takes a few days for them to die, but it is effective in killing them. The benefit of using growth regulators is that they have less impact than many broad spectrum pesticides on the predator and parasite insects in their adult stage. They affect only immature insects.

A couple of growth regulators are available such as Talus and Distance. Each has a slightly different mode of action, which is good because we need different classes of materials, but are both still insect growth regulators. In late fall, horticultural oil may be used to control soft scales. A 2 to 3 percent oil applied when temperatures are above 50 degrees Fahrenheit is effective. Insects obtain their supply of air through openings along the side of their body called spiracles. Horticultural oils work by coating the small sensory hairs, called cilia, in the spiracles, preventing the cilia from moving air into the insect's body. Oils are effective and have been refined over the past 30 years to produce fewer plant-damaging residues. The horticultural oils work best when applied to low- to medium-sized scale populations. With larger populations, especially of armored scales, the scale covers are clustered, making contact with the horticulture oil difficult.

Research

The University of Maryland Extension Service received a grant from the Maryland Nursery and Landscape Association for 2014 to 2017. Our goal was to identify major scale insects and to develop a monitoring program that would enable us to detect and alert growers and arborists to the crawler period. We hired students and technicians to scout and sample plant material, monitoring the different scales and their life stages, and correlate that with degree-day information and plant phenology. From this information we developed IPM Alerts and Scale Fact Sheets. Arborists can visit our website at www.Extension.umd.edu/IPM. Go to the fact sheet section to download the PDFs. Each Friday we publish a weekly IPM Alert that lets growers know what insects and diseases are active, and when specific scale species are in the susceptible crawler stage.

Insects respond to temperature, not the calendar. Using degree-days instead of actual dates takes into account yearly temperature fluctuations to help pinpoint the crawler stage. The weekly IPM Alert reports also contain information on degree-days accumulated in the different areas of Maryland. Degree-days are obtained using a base of 50 degrees Fahrenheit. Insect development is controlled by temperature, and we use degree-day accumulation to predict when crawler stages of the various scales will occur. This provides better information to the arborist for timing sprays. For example, let's say the first generation is known to be present at 402 degree-days. When you reach 350 or 400 degree-days, you should start looking at your plants for presence of crawlers.

A helpful scouting method is to use the 3M brand blue painter's tape or black electrical tape. Wrap it around a branch sticky side out and monitor for crawlers as they move onto the tape and get stuck. This will provide you with more timely local information. Another method of estimating the crawler stage is based on plant phenology, a correlation with the time particular plants are in full bloom. For example, if Chinese lilac, *Syringa chinensis,* is in full bloom at the time the crawler stage of the scale is present, you can focus on that plant material as you scout the neighborhood.

Scale, female (round covers) and male (elongated covers) of white prunicola scale

Prunicola Scale

Prunicola scale is found mainly on plants in the genus *Prunus*. In Maryland, prunicola is found on cherry laurel, a common landscape plant, but it is also increasingly seen on cherry trees, rhododendrons, and boxwoods. The female scale has a round cover compared to the bright white elongated cover of the male.

The crawlers are bright yellow with the typical six legs, antennae, and ability to move around common to most insects. Crawlers do not have wings and therefore don't fly. Only the males will develop wings; the females never fly. Crawlers are small and lightweight; a certain number will settle close to where they emerged, on the same plant. Other crawlers are a bit like hitchhikers, they catch a ride on birds' feet or on larger insects.

They have three generations per year, but may go unnoticed until the end of the season when the males' bright white covers are very noticeable. The first generation begins in the spring, usually May, followed by a midsummer generation and then again late in the season. By the end of the season, the population builds to such a high level that they cover the stems and twig dieback becomes obvious.

Lecanium Scale

Lecanium scale is a soft scale that overwinters in its second instar. Soft scales retain their legs during all life stages so they are capable of moving if needed, but are usually not mobile after initially settling in the first instar. As leaves begin to drop, the insects move down toward the stems or trunk until the following spring.

The East Coast has seen a huge rise in these populations. Lecanium scale feeds on the growing tips of plants. To obtain a particular protein, these insects need to take in a large quantity of plant sap and water. In the process, large amounts of sugar also enter the insect, which they excrete as honeydew.

Larger numbers of lecanium are found in urban areas with higher temperatures, as compared to wooded sites. Higher temperatures cause the scales to appear earlier in the season, before beneficials reached their peak population, with fewer natural predators and parasites available to suppress them.

Lecanium scale on elm

Indian Wax Scale

Introduced from India, this has become established on approximately 122 different species of landscape plants. They are commonly found on evergreen and deciduous holly, pyracantha and hemlock, and in Baltimore County have been found on Japanese maple.

This insect looks like a blob of white wax stuck onto a plant. It often goes unnoticed until the foliage drops—once the stem is visible, the white bodies of the scale become obvious to the layperson. Since they aren't readily identified as insects, they have been mistaken for a fungus. Upon closer examination, a little horn is visible, protruding from the wax covering.

The crawler stage for these is between 854-985 degree-days, with one generation per year. In most years this falls between late June and early July. Horticulture oils are not effective for Indian wax scale because the oils will not stick to their waxy coating. Systemic insecticides or neonicotinoids are effective, as are the IGRs. We are presently testing a new systemic insecticide called Altus for soft scale control and should have results by early 2018.

Juniper Scale and Minute Cypress Scale

These are both armored scales, and with slightly different crawler periods, are difficult to distinguish in the field, though treatment for both species is similar. The Leyland cypress has been the major host for the minute cypress scale in Maryland. Green giant cypress is gaining popularity and although we haven't seen minute cypress scale on these yet, I suspect that as the population of green giant cypress increases we will begin finding minute cypress scale on them.

Indian wax scale on holly

Minute cypress scale

Both have one generation per year. You should begin scouting for crawlers at 530 degree-days. An IGR is my first choice for control. Horticulture oils can be used to suppress the population.

Japanese Maple Scale

The Japanese maple scale is dangerous. It is the nastiest scale we have dealt with, and most prevalent in nurseries and the landscape in the last decade. In a normal season, the first crawler stage is six to seven weeks long. This is very long compared to the typical two to three weeks for most scales. Because they produce crawlers over a longer period, they have a greater survival rate, and there are two generations per year. The second generation can have crawler periods lasting seven or eight weeks.

Chemical controls may break down before the crawler period ends; in some cases, two applications might be necessary. Most standard pesticides are not effective against this pest. We were not successful with pyrethroids, neonicotinoids or most systemics. Control was achieved when the plants were treated with insect growth regulators. In our trials, we found that the IGR Distance

Japanese maple scale on dogwood

does a good job. In heavy populations, it may take up to two years of application to bring the scale under control.

Part of our research grant from the Maryland Nursery Association was used to monitor these insects for two years. The first generation of Japanese maple scale begins crawling at 806 degree-days and ends at 1,144. The second generation starts at 2,200 degree-days and ends at 3,037. The insect finishes crawling and overwinters in its second instar on the bark in late fall.

In 2017 we began working with Bayer Company and Brian Kunkel of the University of Delaware Extension Service, to evaluate new systemic low-risk pesticides for scale. We should have more information on the efficacy of these materials in 2018.

Stanton Gill is an extension specialist (professor rank-principal agent) in IPM and entomology with the University of Maryland Extension based at the Central Maryland Research and Education Center in Ellicott City. He is also a professor in the Landscape Technology Program at the Germantown Campus of Montgomery College. Contact him at sgill@umd.edu

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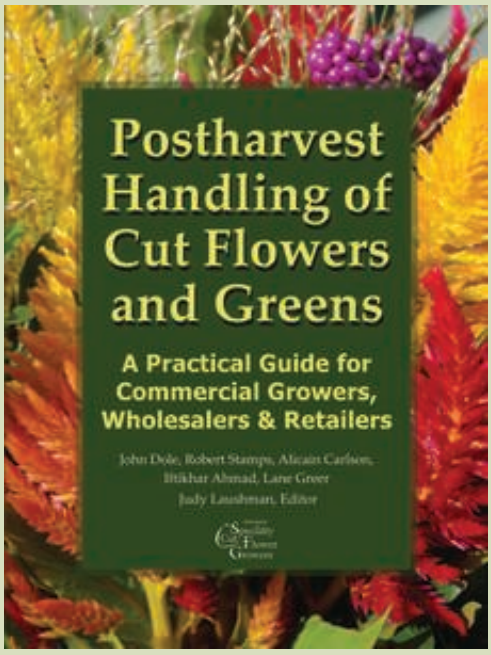
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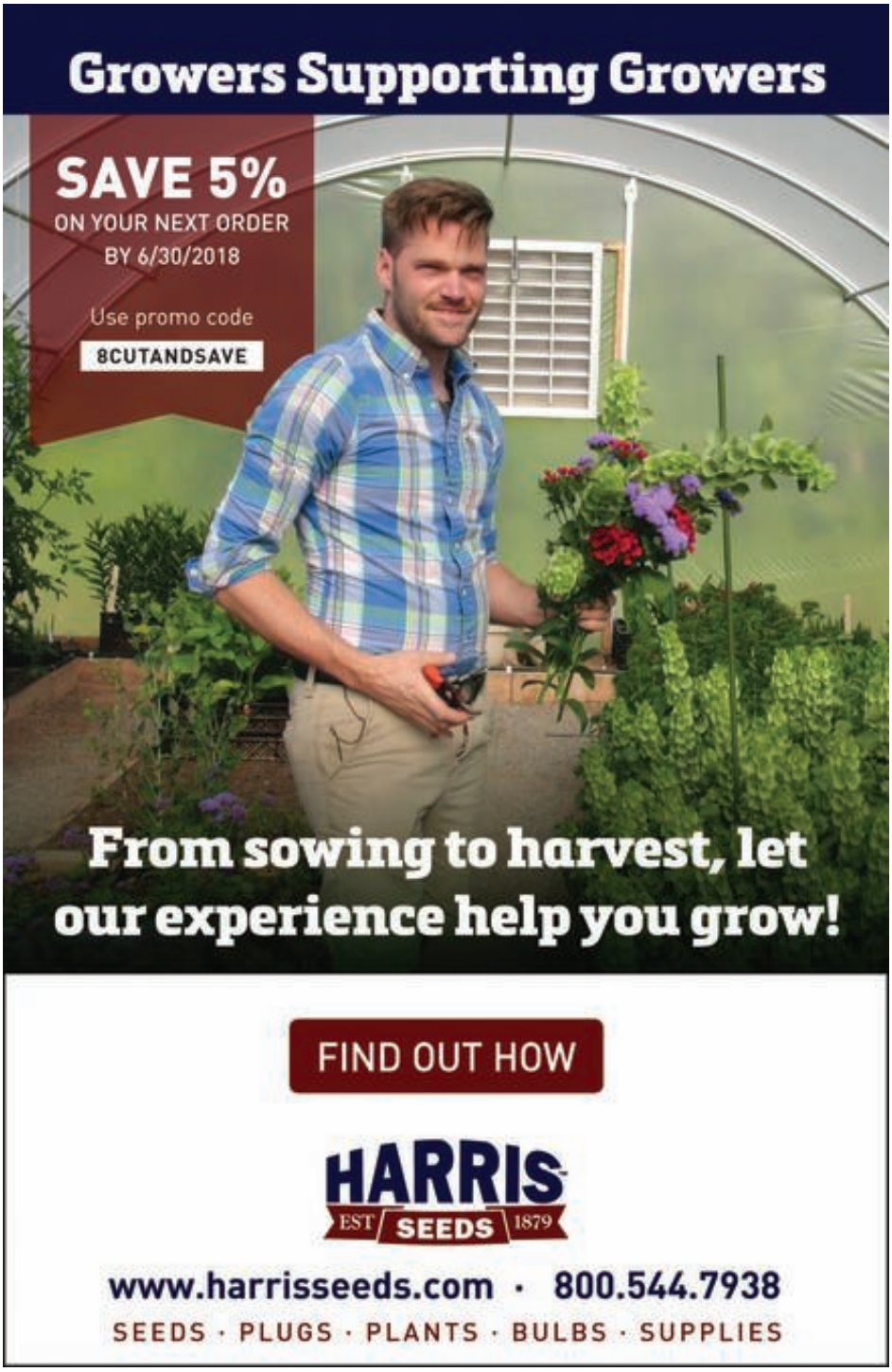
"Well, it's winter now." That's a sentence we say around here as a joke whenever anything is cold or dark or frozen. We do not grow much of anything in the winter months, so December and January are meant to be cozy times curled up with catalogs and textbooks and computers on our laps as we sit as close to the woodstove as possible.

I look out my back window and see some of my woodies that were planted six or so years ago. This year some of them have really paid off. Especially *Physocarpus*, *Hydrangea paniculata*, *Symphoricarpos*, and *Cotinus*. The *Cotinus* branches are now naked of leaves because "Well, it's winter now." It's a tricky business harvesting those beautiful leaves in October as it feels like each day could be the last day they are intact. Also in October I appreciated the *Symphoricarpos orbiculatus* as the foliage turned from green to an olive bronze. They worked well in several weddings for texture and interest, as both deep magentas and burgundies and neutrals are very sought after in September and October. In planning that garden and my next field of shrubs for cutting I often reference *Woody Cut Stems* by Lane Greer and John Dole. If you are thinking of investing in some shrubs and trees for the long haul, definitely order that book from the ASCFG soon!

As I reflect on 2017, my flower farm fared well. We took on fewer wedding projects but expanded our business selling to other designers. I changed my management structure and delegated the counting and packing of stems to my "process manager", which allowed us to fill more complicated orders but also freed me up to make deliveries and keep on top of planting schedules. My "harvest manager" keeps track of my harvest lists with the help of an assistant or two. Our team was smaller, but we spread our cutting over more days of the week and did a better job harvesting as maintenance while not wasting time cutting flowers we didn't need. We were a leaner and more efficient crew, so payroll was significantly less, even though we were able to raise wages a bit across the board.

As you all know, delegating can be tough, and having submanagers requires that I convey to them what pieces are important (and why), but then I also need to step back and get out of their way. It's so important that I don't undermine their management. I like giving verbal directions and talking things through, but my team tends to work best from a list and they often take notes when I talk. This is great because my handwriting is difficult to read at times. I've learned a lot about managing a crew over the last few years, but last season I had a breakthrough that seems obvious now. I realized that I can't both rattle off general stuff that needs to happen, and schedule every moment of my team's work on immediate tasks. If I want them to both operate without me and get ongoing projects done, I need to leave them with some unstructured time to tackle those jobs. Of course, unstructured time really works only for folks who have plenty of hustle on their own and are good at seeing the big picture. Now that I know this kind of work is possible I'm excited to raise my expectations for that in the future.



We have started to pore over our sales records to analyze the data. In May and June, poppies and anemones ruled the roost. It feels great to kick off our selling season with such special flowers. We also tended to sell out of anemones, so people learned they need to snap them up early. One weekend that stood out was that of July 4th. Last year that U.S. holiday fell on a Tuesday. A Saturday before a holiday is usually a big day for market sales, but it appears that July 1st was one of our largest sales days for mixed bouquets. If you sell at farmers' markets in the U.S., it might be worth beefing up your crop offering for that week. Sunflowers would be a fairly easily programmed option to expand for the holiday. In our climate, stock too. For that week eryngium 'Blue Glitter' that had wintered over was a main ingredient as well as snapdragons. Holiday sales are a great example of how helpful it can be to keep detailed sales records, as those days are outliers for number of units to produce. It's also helpful to notice the trend that for us a Wednesday following a holiday weekend is always significantly slower than an average Wednesday.

I realized that I can't both rattle off general stuff that needs to happen, and schedule every moment of my team's work on immediate tasks. If I want them to both operate without me and get ongoing projects done, I need to leave them with some unstructured time to tackle those jobs.

As I step back from 2017 and reflect, I am so thankful to be a flower farmer in this community of flower farmers. We are fortunate to have each other to lean on for support when we get frustrated and figuratively and literally stuck in the mud. Even just being able to text each other a bit and say "Oh my goodness, this is hard right now!" can mean so much in our world full of beautiful photos of bountiful harvests. We really are each other's best cheerleaders and inspiration. I appreciate you all so much. I hope you all are able to recharge your batteries a bit and do some strategic planning for 2018. Happy New Year!

MID-ATLANTIC

Delaware, Maryland, New Jersey, Pennsylvania, Virginia, and West Virginia

Lisa Ziegler
The Gardener's Workshop
lisa@shoptgw.com

What a delight to serve as a Director of the ASCFG! The Board meeting last November was packed full of exciting planning and plotting. As a member of other professional organizations, I just haven't experienced the kind of focus on education and member services as this group does. What a pleasure. Thank you for allowing me to be a part of this experience.

There were several notes of interest discussed at the meeting. One project we will really need your input on is the Price List survey. It will be coming out later this year, and I want to encourage every member to pause and complete this survey as soon as you receive it. Pricing information is the most requested bit of information I receive. The ASCFG can update this resource only if responses are received, so please, do it as your experience allows for the benefit of all.

A highlight of the meeting was putting together the details of the 30th Anniversary of the ASCFG. We plan to celebrate and acknowledge this milestone throughout the entire year of 2018. 30 years ago this group got its start and look how we've grown! All kinds of fun ideas came up like the hashtag #ASCFGturns30 and posting fun photos about the number 30. The possibilities are endless, and I can't wait to see the Instagram posts to start rolling!

The ASCFG anniversary is an excellent opportunity for each of us to reflect on our own businesses. Where have we come from and where are we going? Think of the wisdom and experiences that can pour out of this group if we all shared on this reflection. Posting these words on the ASCFG Facebook page could make for some great winter reading. Won't you join in? With a title like "Where I Came From and/ or Where I'm Going" I can imagine reading some remarkable stories.

My story is like many. I loved gardening and stumbled upon Lynn Byczynski's book *The Flower Farmer* and knew I had found my life's chosen work. Along with this book, I had just met and married the man of my dreams, who came with the perfect farming dowry: land that had been composted for decades, a tiller, gardens of hydrangeas, and dump trucks. The rest, as they say, is history.

The book that started it all for me and so many others.

Like most farmers, I'm overly ambitious and driven, so I jumped in with both feet. I didn't spend much time wondering. I planted, and planted, and then planted more, and started beating the bushes for customers. It didn't always workout as smoothly as I had thought, but I got through it and learned from my mistakes. There were times when I knew what I was harvesting would be going to the compost heap in the early days before I had a strong customer base, but I pressed on. I did what I had to do to keep the flowers coming for when I did have sales. I just got up every day and kept doing it. And here I am still plugging along—and still making mistakes, by the way.

These humble beginnings seem so long ago. Twenty years later I've grown to the flip side: more demand than I want to meet. New challenges and problems to overcome all the time. As I look back over the years at all my harebrained ideas, the raw sweat and tears, and the beauty I have grown, I am so glad I did it all. I won't change a thing...well, maybe a couple things.

My humble beginnings at the Williamsburg Farmer's Market in 2002.

What's your story? How did you land here? Please share a link from your blog post on the ASCFG Facebook page or just spill it right there on the FB page! I'll be sharing "Where I'm Going" later in 2018 as my chosen work will be taking a turn that I'm totally excited about!

SOUTHEAST

Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee

Val Schirmer
Three Toads Farm
vschirmer3@gmail.com

30 Years Young!

1988. The year the Association of Specialty Cut Flower Growers was formed.

When I think back to that, we were still two years away from moving to the country, to a small farm we named Three Toads Farm. One thing I just learned that we have in common: the notion for the ASCFG was conceived in a bar, and the idea for our little cut flower farm was conceived over some Kentucky bourbon on our front porch. That just might say something about the force behind every big, totally far-fetched idea! Sometimes we just need to get our courage up.

As you all know by now, the ASCFG is celebrating its 30th anniversary in 2018, the same time Three Toads Farm is celebrating our 20th anniversary. I don't recall if in 1988 I'd heard of the ASCFG, but I sure did two years later, when we were making just about every mistake known to man in our attempt to grow Oriental lilies! That's when my flower farm partner (our good friend Charlie Hendricks, who still enjoys a good bourbon on our porch) and I said we need to either get a LOT better at this flower farming, or find another weekend hobby. So we recruited a third partner to help Charlie with the growing end, and I joined the ASCFG to figure out what in the world we were doing.

And THAT was our turning point.

The first year I joined the ASCFG, I went to the National Conference in Texas. Wowzer. I came back bursting with newfound knowledge, insights, and ideas from the presentations, excited about what I learned firsthand in the farm tours—and full of confidence that, yeah, we just might be able to actually do this.

And you know, I feel the very same way every time I go to another conference or meeting, visit another grower's farm and talk with other farmers and, now, farmer-florists, whether they're long-time growers or itching to get started. There's just no other organization like this.

The power of consistent branding on display.

At one time, I got too busy with work and had to step away from flower farming for a few years. When I came back, I immediately rejoined the ASCFG and was so excited to see that things had not changed at all; in fact, they have just gotten better.

When I think back on a couple of big things the ASCFG has meant to me, these three things really stand out

- Branding. At my very first meeting in Texas, I listened hard when Frank and Pamela Arnosky talked about the power of branding and how that sets you apart: naming your business, creating a logo and promoting who you are and why you're unique. We had our farm name, and I paid a landscape architect who I knew had an undergraduate in art, to create our logo. I totally bought in to what they were saying, and it's made a big difference in the reputation we've built over the years. Today I see so many members who have done the same thing, and more.

- Growing lisianthus. If it wasn't that first conference, it had to have been the next one where Bob Wollam gave a presentation on growing lisianthus. I came back, talked my partners into giving them a go, and we planted our first lisianthus that year. We put them next to the sunflowers so they wouldn't take up a bunch of space, and we didn't net them because at that time we didn't net anything else. We loved them, our customers loved them, and we gave them a whole lot more respect the following year, and every year since. Lisianthus is one of those cool flowers that just keeps getting better and better. I was so excited at our Board meeting last November when Linda Doan agreed to give a presentation on the crazy gorgeous new varieties of lisianthus at our National Conference in Raleigh this year. The learning never stops!

- This community is like no other. From the very first meeting, to every one I've been to and just about every contact I've ever had with another member, I continue to be astonished by the kindness and generosity our members have for each other. We don't keep secrets; we share our secrets with one another. We learn from our mistakes and our successes, and then we share it.

This is an amazing organization, and a wonderfully astonishing group of people. Bring on the NEXT 30 years!

NORTH AND CENTRAL

Iowa, Illinois, Indiana, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin, and Wyoming

Jamie Rohda
Harvest Home
harvesthomenjr@aol.com

Thank you, Mimo!

I would like to start my first column by thanking Mimo for all her years of hard work and dedication to the ASCFG. I feel humbled and a bit nervous to step into her role here as the North and Central Regional Director, and to attempt to fulfill the duties that she has done so well. Thank you, Mimo!

So, to ease into this position, I'd like to take this first column to introduce myself, my husband and business partner Norm, and our little farm, Harvest Home Flowers. I like to think of our flower farm as a sort of happy accident. I look with envy on all the new growers now who have so much knowledge, experience, and community at their fingertips. I'm sure we would be light years ahead of where we are now if we had started with a plan…but we didn't.

Twenty-three years ago we found ourselves living on a rented acreage, tending a veggie garden for our growing family, and giving away loads of extra produce that we seemed to always have. It occurred to us one day that maybe we could sell some of our surplus to earn a bit of extra income to make it easier for me to stay home with our children. Farmers' markets were fairly new in our area at that time but there was a tiny mid-week market in a small town close to us so we decided to give it a try. We would proudly display our meager offerings of extra produce each week, and I would bake cinnamon rolls and potato rolls to round out our offerings. We soon developed a loyal clientele and the first week that we brought home $50 we were hooked!

We stopped doing weddings and markets, and 2016 marked the first year that we focused entirely on the florist route that had been growing steadily each year. In just one season our income has grown to equal our last year at market, which was our biggest year ever. It's been a great decision for us at this time in our life.

We decided we needed a name so we started to call our business Harvest Home because it truly was a harvest from our home. With that first season under our belt we started to dream of what we could do if we had our own land and the search began. Money was tight and we discovered that a house with land anywhere near Lincoln was going to cost way more then what we had, but dreams don't die easily. We finally found our eleven-acre piece of "heaven on earth" situated conveniently between the two largest cities in Nebraska. Unfortunately, because of the price range we could afford, it looked like anything but heaven to most people. Despite the crumbling house, untended yard, and piles of debris everywhere, we could see potential. We took a year off from doing a market in order to clear garden areas and to make the house somewhat livable.

We were now less than a 30-minute drive to the largest open-air market in Nebraska, so we signed up to do the Haymarket Farmers' Market in Lincoln, and that's where we spent the next 20 years selling the bounty from our farm. I was immediately drawn to the vendors who were selling cut flowers, and thought "I could do that!"

I started snipping from the flowers that I found growing around our yard, and each year I would add a few more. We put up a hoophouse to extend our veggie season, which I quickly filled with flowers. Norm decided we needed another one so he could have one for veggies and I could have one for flowers, but it quickly became devoted to flowers, too. No matter how many we grew we always sold them.

One stall at market turned into two and we eventually gave up the veggie part of our business entirely. Young ladies and their mothers started asking if we would do weddings and we happily obliged. I had a bit of floral experience in my past and I loved the challenge. We then had florists start to show interest in our

flowers so we decided to start a route to florists and designers in the surrounding area. Saying no just never occurred to us!

Now, as our children are quickly growing up and leaving the nest, we've decided that it is time to change our focus. We stopped doing weddings and markets, and 2016 marked the first year that we focused entirely on the florist route that had been growing steadily each year. In just one season our income has grown to equal our last year at market, which was our biggest year ever. It's been a great decision for us at this time in our life.

As you start gearing up for spring planting I'd like to encourage each of you to take a hard look at your business and see if it's still the best fit for you. If it's not, maybe it's time to make some adjustments. One of the greatest benefits of being self-employed is that you can adjust your business to fit your life instead of adjusting your life to fit your business. Happy planting!

My husband Cory (left) and I (right) run the farm with the help of our family (pictured above) and a handful of employees.

SOUTH AND CENTRAL

Arizona, Arkansas, Colorado, Louisiana,New Mexico, Oklahoma, Texas, and Utah

Shanti Rade
Whipstone Farm
info@whipstone.com

The Best Worst Lesson of 2017

Since I am new to the board and haven't done much in any official ASCFG capacity as of yet, I'll just introduce myself and our farm this go around.

We farm in northern Arizona, between Prescott and Flagstaff, in the high elevation desert. We are in Zone 7 where we actually get winter, unlike the low desert where the human snowbirds all flock this time of year. We are able to grow vegetables year-round with the help of storage crops, heavy row covers, and unheated greenhouses, and currently the flower growing season is about 9 months long, although I would love to figure out how to have 12 months of flowers too. We are hot and dry in the summer (although keep reading and you might not believe me on the dry part). We currently farm on 18 acres with about 3/4 of that being vegetable production and the remainder in flowers. Our main sales outlets are farmers' markets and CSA subscriptions, with an increasing amount of product going wholesale to restaurants and florists. We also do some wedding and design work, but that is currently asmall portion of the business.

We started with a quarter-acre personal garden almost 20 years ago. We have grown in small increments and with occasional growth spurts along the way. As you all know, farming is an endless quest in learning. There is so much we have learned over the years and so much more yet to come. Last year, in particular, our lessons were big. We experienced our most destructive weather event in 20 years this summer, in mid-July, when a flash flood and major hailstorm came through simultaneously.

Because it's the digital age, I immediately posted photos and video footage of the storm on social media, without really thinking about where that would lead. It was intense. Over the next few days, we took stock and estimated about $75,000 worth of crop damage, not including the loss of topsoil. Our community was distraught and eager to help. But the thought of tens to hundreds of people showing up with shovels to help unearth

plants from mud and debris made me have heart palpitations, from liability issues to the chaos of untrained helpers doing more harm than good. And, in actuality, what we really needed most was to keep our employees on staff, when the easiest way to survive financially would have been to lay most of them off. I half wished I could just delete my storm posts and hide under a rock and maybe just quit farming at the same time.

In an effort to not alienate our dedicated customers who truly wanted to offer some help, and with a lot of prodding from trusted friends as well as a few days to get over our own pride and self-sufficient mindsets, we decided to do a fundraising campaign.

And here is where the real lessons came. All these years of farming and we thought we were just working hard to grow something good and then sell it. But we were really doing so much more. The outpouring of love, sympathy, support, financial contributions, kind words, and personal stories showed us how meaningful our struggle was for others. The campaign spread quickly and reached so much further than I could have imagined (it was shared 225 times just on Facebook). I thought it would just be our geographically close community that would support us—the ones who we see at the farmers' market each week. And they did support us.

But so did many friends far and wide, along with farmers around the globe and even strangers. It created such a mix of feelings. From joy, to relief, to guilt, to gratitude. I have a hard time receiving compliments from friends, let alone money from strangers. When I contemplated why people were so generous (I actually had to ask a few of them because I was in such shock) the answers that came back still surprise me. Because we have given a lot to the community through donations, tours, classes, and just sharing our story. Because people trust us and want to make sure we will be around into the future to grow their food and flowers. Because they love what we do and not just that, they love us too. Learning to be receptive to these answers was the big lesson.

I know this type of natural destruction is nothing new to farmers. Last year was especially hard weather-wise in many parts of the world. After what we had been through, I felt such a deep sympathy during Hurricane Harvey and the northern California fires when my farming friends were experiencing similar devastation. I wish there was a way to help in every disaster. Figuring out how and where to put your efforts is its own challenge.

I am happy to say that through the support of our community we were able to keep our employees working, recover some of our crops, and replant even more of them. Thankfully we have two farm sites and only one of them bore the brunt of the storm. In the end, our sales didn't look great for 2017, but we're surviving and we are obligated now to keep trying our best. We've weathered the storm with the help of so many others. We are headed into 2018 with more knowledge, more humility, more resiliency, and just as much grit as we've always had.

I look forward to my future updates being full of successful crop stories, marketing ideas, and business improvements. I'm excited for my future work with the ASCFG Board and helping our Region through collaboration and learning opportunities. Please get in touch with any ideas and feel free to stop by our farm in Arizona for a visit.

If you would like to see some video footage of last summer's storm go to vimeo.com/232169720 use the password: farm

Even though it was our worst flower season in many years, we were able to supply our CSA customers (with only a one week hiatus) and the majority of our wedding clients.

WEST AND NORTHWEST

Alaska, California, Hawaii, Idaho, Nevada, Oregon, and Washington

Lennie Larkin
B-Side Farm
lennielarkin@gmail.com

As we're wrapping up our third season with the Sonoma Flower Mart, I thought it was time to shed some light on our little mart, and how we've tweaked our model while we search for the best way to fit our particular corner of the world. I've gotten a number of questions about the SFM from ASCFG members in the past year who are looking to pull together with other local growers to form some sort of collective selling model, so here go some answers.

The Current Model

In a nutshell, these are the stats of the SFM as it operated in 2017:

- 2017 was the first season as an open, shop-the-floor market. We operated on a much smaller, pre-order only scale in the past two seasons.
- Run as an LLC by two women with a floral design company, with the "member" farmers as stakeholders. We had seasonal meetings and opportunities to voice our opinions in the business, although we're not owners. We originally considered opening as a co-op, but didn't have the level of organization, time, or buy-in to get this off the ground so it instead was spearheaded by a local florist and farmer advocate from our regional group.
- Housed in warehouse space in a building shared by a coffee roaster and the florists who run the Mart, we were able to negotiate rent for just two days per week.
- Open two days a week, Wednesday and Thursday from 7:00 a.m. to 1:00 p.m.
- Six farms selling each week (three of us smaller farms shared one stall/salesperson/rent).
- Each farm/stall must be present to sell its own product.
- Open to both wholesale shoppers (must buy a $50 badge for the season) and retail shoppers, different price tiers.
- Mart-wide availability list and pre-ordering available to farms who want to pay a SFM staffer to take the time to compile the list, send it out, and receive orders. We use an online ordering platform called Freshr.
- Each farm pays monthly rent to LLC for warehouse space.
- Farmers keep 100% of their profits.
- The Mart runs one stall with items bought on consignment from non-member farms.

The Lay of the Land

We're located an hour and a half north of San Francisco, in the center of Sonoma County, a huge destination wedding region. We've got tons of florists based in our area, but are also home to many weddings designed by San Francisco-based florists. Most florists in both camps travel to the huge SF Flower Mart on at least a weekly basis to purchase flowers. When we expanded into a farmer's market model this year, we hoped to be able to provide enough consistency, variety, and quality to become a one-stop shop for florists. If we can eliminate the need to travel down to SF, and allow people designing with flowers in the North Bay to buy North Bay-grown flowers right here in the North Bay, we'd consider that a huge success. It's hilarious that this is seen as an almost revolutionary concept in spite of how old school and sensical it is. It's often the case that Sonoma County designers will buy Sonoma-grown flowers down in SF, only to cart them back up here.

Successes

- By joining forces in getting the word out about one central location to buy flowers, all of the small farms were able to greatly expand their reach. We got way more traction as a central body than most of us did independently.
- Florists were able to make big pre-orders for items they knew they would need, as well as "shop the floor" for last-minute, impulse, or rare items.
- The camaraderie, support, and sense of community created by the Mart was pretty spectacular.
- We were able to spread the word about local flowers far better together than any of us alone.
- Proved to be a great weekly sales outlet for most of the farms.

Struggles

- It's still hard for customers to pre-order product sight unseen.
- We don't always have enough variety in our products to draw florists from far away, or to become a one-stop-shop for them in a consistent way.
- Many farms grow the same items.
- Farms with destinations for shrink fared better. If I had had a grocery store or farmers' market account this year, I would have cut more flowers to bring to the mart, knowing that I could have sold them elsewhere afterwards (even for less money).
- It's hard for the Mart to depend on some of us super small

farms for large and consistent numbers of flowers. They want to highlight and support us, but need to be able to fluidly buy in from larger farms (and slightly farther away) in order to fill in when needed. This seems like it must be tricky to flush out.

Room for Growth

We're getting closer with each season to figuring out what works. With more variety in our products, bringing in some rare or staple products from non-North Bay farms, reaching out to grocery chains or other new outlets, and a bigger focus on advertising, we'll be getting even closer in 2018 and beyond.

CANADA

Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland and Labrador, Nova Scotia, Ontario, Prince Edward Island, Quebec, and Saskatchewan

Janis Harris
Harris Flower Farm
janisandmarkharris@hotmail.com

Most of our world runs at a fast-paced, instant gratification, and "I want it now." lifestyle. But there is something to be said about trying things and learning from our mistakes. One morning I found myself quoting a character from a popular television show from my childhood—Ms. Frizzle from The Magic School Bus. "Take chances, make mistakes, and get MESSY".

This is a great mindset to have. I believe that as farmers we do have this mindset because we are always looking to next year. If something doesn't do as well as we hoped, "There is always next year". If something is a success, we want to have it exactly the same next year. 2018 is our 10th season growing. But ten years ago our business didn't look anything like it does now. In 2008 I was encouraged by my mom to grow gladiolus for our local farmers' market. My parents grew vegetables, and were an anchor vendor at the market. I ordered 3000 glad corms and roped Mark, my then long-distance boyfriend (now husband) into helping me plant, grow, harvest, and sell the flowers. We had a great year! I was hooked.

The next year I added sunflowers and other annuals, as well as anything else my Grandma would let me pick. We continued growing this way for the next couple years. Then we planted the glads at Grandma's farm (now our farm). That summer I experienced thrips and cucumber mosaic virus for the first time. I was upset that we didn't have the usual number of glads to sell. That year was definitely a learning experience. It didn't stop me as I learned there are hurdles and blocks in my way, and I have to persevere.

Looking back at growing up in a full-time farming family there are many things that I realize now:

- Diversity is key; don't put all your eggs in one basket.
- There will be good times and bad times; remember the good.
- Stick-to-itniveness is the best trait to have.
- There will always be next year.

Our business changed when I was lucky enough to be off for a year maternity leave (yea Canada!). The business changed in a few ways. Farming with a baby was a learning curve. I had plans of doing so much on my "time off", I quickly learned that a June baby wasn't the most ideal time for a farmer. We did do a lot of farming but it also took a lot of help from family and accepting that some things wouldn't get done. We still had flowers to sell and we were at the markets but it was a different pace. Flower farming was still an extra to our income, not a primary. I did return to my city job (optician) full time after the maternity leave and flowered in our after work hours.

Baby # 2 came two and a half years later. A November baby meant that winter planning could be scheduled around nap time. When flower season started he was older and I had a little more freedom to flower farm with him. I did my first weddings

with him in a wrap. I started to see that this flower farming could be a real business. Baby #3 was a surprise two and a half years later in March. By this time #1 was in kindergarten, #2 wanted to be involved, and I was a pro babywearer. I took on more weddings, we continued with our farmers' markets, and our customers watched our kids grow up. They were excited to see our kids (and flowers) each week.

When it was time to return to work after the maternity leave I had already talked to my employer about reduced hours so I would be able to be on the farm more. The two youngest went to daycare and I had full-time farming days. I quickly realized that flowers were more than part time. In spring 2017 I approached my employer about having the summers off and returning to work in November. I was prepared that they would say no and I would have to resign. They agreed, as long as I still worked minimal hours (6 hours per week) through the summer, and helped if they were in a pinch. So nine years into my flower farming journey I was flower farming full time.

I am telling this story to show that things don't happen overnight. In our "I want it now life." sometimes good things come to those who wait (and work hard). Flower farming is the cool new thing but it's still farming. It's still hard work and at the mercy of Mother Nature.

Over the years I have made many mistakes. The only problem with making a mistake is to not learn from it. I have rotted many ranunculus and swore that I wasn't going to try them again. But the Ms. Frizzle in my brain kept saying "Try again", and in the spring of 2017 I picked the first ranunculus that I was able to get to bloom. It may seem trivial to some but that was a huge triumph for me.

I have made the mistake of pricing my earlier weddings too low. In the beginning I was excited just to have someone think of me for their wedding. I agreed to anything as long as it meant I was doing the wedding. There were a few weddings that I look back and cringe at. I know I made little to no money because I ordered in whatever flowers they wanted or the wedding was totally not my style. I am much more upfront about what a Harris Flower Farm wedding looks like. I'm not afraid to say no to a wedding. Not because I am too good for it but because I have proven my track record. I can be honest and say I can not do a dyed orchid and baby's breath wedding, but my friend Rosemary sure can!

Another mistake I made was not realizing how great an ASCFG membership was for a birthday present. My Mom signed me up for the Association five years ago. I remember opening my gift and thinking "Thanks, Mom." Little did I know how important the Association would become in my life. In 2012 Mark, our two little boys, and I went on our first long road trip. We drove to Wooster, Ohio to an ASCFG Regional Meeting. I was amazed to find so many people that were excited about

flowers like I was! I met people at that meeting that I consider some of my close friends. The ASCFG membership is an awesome tool. There is so much information at your fingertips. The information is real and true and from experts. Sometimes just because an answer is posted to a question elsewhere doesn't mean you are getting the best information.

After sharing some of my history I bridge into the Association's history. 2018 marks 30 years! The ASCFG today looks very different than it did 30 years ago. It has stuck to it in the good times and bad. Membership is at a record high because there is so much diversity in what it has to offer. There are so many great presentation, articles, online information, and great people. It is a new challenge for the ASCFG to grow and cater to the needs of growers in different stages of their business. But we as the Board are taking on that challenge.

It's exciting to have a full workshop for new or beginner growers (Oberlin, Ohio February 20-21.) Take advantage of the membership benefits as soon as possible, don't wait like I did! There is also a session for Seasoned Growers (New Orleans, March 13-14). They face an entirely different set of issues and needs. I'm looking forward to hearing how that meeting comes together. And in September, in Raleigh, North Carolina, get ready for the best get together party and learning experience possible! The ASCFG turns 30 and we are going to celebrate! The Board has already been working on a stellar lineup of presenters and activities. It is an event you will not want to miss!

I may not be "old" (turning 36 soon!) but I think I am wise to a few things.

- There is great joy in growing things.
- The flower that you grew always smells sweeter.
- When you choose a job you love you will never work a day in your life.

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- / / Dahlia
- / / Roselily
- / / Calla
- / / Asiatic, Oriental, & OT Lily
- / / Freesia
- / / Alstroemeria

WHERE PASSION COMES TO BLOOM

Flamingo Holland Inc
1250 Avenida Chelsea, CA 92081
800.550.5459 | info@flamingoholland.com

WWW.FLAMINGOHOLLAND.COM

Meet the ASCFG's Newest Members

Judith Abbruzzi, Gardens by Judy, North Dighton, MA
Sandra Abell, The Potting Bench, Leonardtown, MD
Sarah Adams, Fence Post Trading Company, College Grove, TN
Traci Anderson, Flora Design Studio, Mahomet, IL
Brenda Lavender and Andrew Kay, Good Hope Blooms, Good Hope, NSW, Australia
Marie Anselm, Cornell Coop. Extension, Canandaigua, NY
Sarai Bar-El, Amsterdam, The Netherlands
Ted Bartlett, Osborne Seed, Mount Vernon, WA
Brooke Baucom, Durham, NC
Alyssa Bauer, Clem's Flowers, Greenfield, MA
Emily Daniel and Ben George, Basil & Bergamot Flower Farm, Whites Creek, TN
Elizabeth Bergman, Genoa, OH
Lyndsay Biehl, Wildroot Flower Co., Marietta, OH
Jayne A. Biehler, Best Berry Farm, East Greenbush, NY
Lee Bower, Biogenerations, Athens, GA
Mary Brainard, Hastings Field, Geneva, NY
Jen Britten-Rohrbach, Jennie Bea's Flowers, Canadensis, PA
Patricia Brooking, Almost Heaven Farm, New Galilee, PA
Averia Brown, Richmond, VA
Alexandra Cacciari, Michigan Flower Co-op/Seeley Farm, Ann Arbor, MI
Casey Campbell, Dirty Boots Flowers, Chicago, IL
Sabine Carey, Free Range Photography, Spring Mills, PA
Christina Castelanelli, South Fork Flowers, Cascade, ID
Rhonella Chaffin, Louisa, KY
Rita Champion, Stitchdown Farm, Bethel, VT
Jess Clancy, Hurley, NY
Lorrie Clevenger, Rise & Root Farm, Chester, NY
Camille Cody, Wild Carrot Creative, Jonesborough, TN
Steve and Deb Coppola, Singing Brook Farm, Groveland, MA
Jessica Crabtree, Wegmans, Canandaigua, NY
Colleen Crawford, Chickamauga, GA
Richard Crout, Crout Farm, Knoxville, TN
Holly Curia, Delight Flower Farm, Urbana, IL
Yousseff Darwich, Grand Valley State University, Allendale, MI
Susan Dempsey, Bagdad Blooms, Bagdad, KY
Sky DeMuro, CASFS, Santa Cruz, CA
Michele Donardo, Guignard Florist, Cicero, NY
Peter Engel, Tartia Farms, East Hampton, CT
Amanda Ernst, Placerville, CA
Kelly Fix, Kelowna, BC
Brinton Fox, City Roots, Columbia, SC
Julie Frame, The Barn @ Helm, Williamsburg, IN
Elyse Frongillo, The Neighborhood Farm, Dover, MA
Katharina Funk, Bremen, Germany
Jeannon Gagne, Rosa Bonheur, Waterville, QC
Greg Gagne, Flowered, Gardiner, NY
Sarah Gentry, Madison, MS
Ryan Godbout, The Diamond Road Flower Co., Hooksett, NH
Rebecca Godlasky, Bloomsbury Lane Farm, Brooks, GA
Jamie Golden, Golden Rows Gardens, Petaluma, CA
Laura Goss, Lewistown, PA
Judy Gray, Gray's Farms, Visalia, CA
Heather Hardesty, Florissant, MO
Cassie Hartman, Ozark Mountain Flower Truck, Springfield, MO
Lisa Hasselman, Forest Garden Farm, Vashon, WA
Brian Henderson, Double Bee Farm, Danville, VT
Alana Henderson Bayzath, Grace Kelly Gardens, Huntsburg, OH
Karen Hogsten, Ashland, KY
Robin Holland, Goode Farm, Ballston Spa, NY
Laura Hudson, Kirkwood, MO
Towhee Huxley, Claremont, CA
Amanda Jacobs, Ridgeland, MS
Rachel Jensen, Apothic Flowers, Ridgeway, WI
Ashley Johnson, Lillington, NC
Jennifer Johnstone, Wyndberry Garden, Saltcoats, SK
Susan Kelly, Marion Moss Floral Design, Petaluma, CA
Heather Kennerdell, West Leechburg, PA
Joni Kinkead, Alburnett, IA
Carrie Kleiman, Floral Compass Flower Farm, Fountaintown, IN
Amy Knickerbocker, Labor of Love Flower Farm, Victor, NY
Kristina Kortlever, Osborne Seed, Mount Vernon, WA
Marjorie Kuperus, Kuperus Farmside Gardens, Sussex, NJ
Melissa Lallo, Kansas City, MO
Sara Lancaster, One Eighty Petals, Fish Creek, WI
Cathy Laws, Delight Farm, Salisbury, MD
Joanne Le Dressay, TwigsTwisted, Langley, BC
Jessica Lennon, Hickory Grove Flower Farm, Espyville, PA
Kelly Lindblom, Flower Girls Farm, Palo Cedro, CA
Emily Locke, Peck's Flower Shop, Morrisville, VT
Julie Marchese, Scotland Yards Greenhouse, Edinboro, PA
Claire McCullough, Butterfly Outpost, Grand Junction, CO
Kelci McIntosh, Shelter Island Heights, NY
Lacey Mellish-Green, Sunnies Flower Farm, London, ON
Christine Moffatt and Michael Palermo, Through Line Farm, Bedford, NY
Lisa Mincy, Laurilyn Farms, Seymour, IN
Andrew Moman, Twin Rose Farm, Murfreesboro, TN
Tyler Morgan, Fredericksburg, VA
Frank Morton, Wild Garden Seed, Philomath, OR
Ranjani Munasinghe, Kurundu Ltd.,Toronto, ON
Megan Murphy, White Heath, IL
Lis Murray, Raceway Berry Farm, Stanley, NC
Rachel Nagele, Still Waters Farm, Hickory, NC
Kelly Nechuta, Namekagon Valley Farm, Hayward, WI
Terry Neufeld, Sweet Petals Farm, Howden, MB
Melinda O'Briant, Turner Farm, Cincinnati, OH
Mandy ODoul, Mandalion Designs, San Rafael, CA
Stephanie Parker, Heritage Springs Farm, New Waverly, TX
Lynn Payne, Tulsa, OK
Kelly Perry, Philosophy Flowers, Boone, NC
Nancy Person, Sunshine Lane Wildflower Farm, Fredericksburg, TX

Paul Person, Sunshine Lane Wildflower Farm, Fredericksburg, TX
Benny Pino, Loblolly Organic Farm, Waldorf, MD
Thad Purcell, Still Waters Family Farm, Bluff Dale, TX
Marian Purviance, Providence, RI
Hannah Quinn, Hastings, NE
Eileen Rapsey, Hedgerow Flower Company, New Tusket, NS
James Reber, Flowered, Tillson, NY
Rebekah Rice, Nine Mile Farm, Delmar, NY
Meredith Ridge, Sunbury, OH
Glen Robertson, Take Your Pick Flower Farm, Lansing, NY
Carolyn Ross, Ogden, IA
Samantha Rothman, Fairview Farm and Flowers, Morristown, NJ
Sarah Rouse, Elements Flower Farm and Garden, Auburn, CA
Lacey Russell, Southern Specialty Cut Flowers, Whitehouse, TX
Suzanne Sanduski, Feura Bush, NY
Erin Schneider, Hilltop Community Farm, Madison, WI
Robert and Allison Schrade, Bantam & Bloom, Alpharetta, GA
Justine Scouller, Flowers from the Farm/Elm Farm, Llanishen, Chepstow, UK
Cathy Simons, Cathy's Cut Flowers, Chehalis, WA
John Simpson, The Augusta Flower Co., Augusta, GA
Amanda Sizemore, Cane Creek Valley Farm, Fletcher, NC
Christina Smith, Bloomin Jewell's Flower Farm, Fairfield, IL
Michelle Soto, Cutting Root Farm and Apothecary, Pittsburgh, PA
Susan Speed, Old Fort, TN
Elizabeth Spencer Hoke, Generations Farm, Jonesboro, AR
Bibiane Sproule, Farm Girls Fresh Cut Flowers, Creston, BC
Cassie Starn, Flower Leigh Farm, Denair, CA
Adrienne Sterling, Sterling Stems, Binghamton, NY
Joan Stevens, Pasadena, CA
Connie Stober, Farmhouse Peonies, Goodrich, ND
Joleen Stone, Lovee & Rose Farm, Bowling Green, KY
Daniele Strawn, JoLee Blooms & Design, Petaluma, CA
Maggie Taylor, Delight Flower Farm, Urbana, IL
Johnsie Taylor, Hope Blooms Farm, Garner, NC
Joseph Tedrow, Split Acre Farm, Rougemont, NC
Elizabeth Telthorst, Trout Creek Farm, Buena Vista, CO
Caroline Todd, Todd Flower Farm, Fulton, MO
Kathryn Trainor, Katydid Fresh Flowers, Columbia, TN
Lloyd Traven, Peace Tree Farm, Kintnersville, PA
Debra Vair, Spencerport, NY
Melissa Van Zeeland, Mabel's Acre, Kaukauna, WI
Koren Vangool, Lynne Road Petals 'n Edibles, Gandora, SK
Hannah Warfield, Flora Verdi, Weaverville, NC
Etienne Watson, One Green Thumb, Bat Cave, NC
Lyn Watson, Fordyce Farm, South Lyon, MI
Daniel Weinstein, Etna, NH
Pamela Wells, Bent Tree Farm, Somerset, OH
Alison Westlake, Coriander Girl, Demorestville, ON
Lisa Whinfrey, Marsing, ID
Mary Whittington, Greenville, SC
Amy Williams, Independence, MO
Julie Wilson, West Richland, WA
Angela Wilson, Eddy Farm, Bristol, CT
Nancy Wisot, Wisot Designs, Cochranville, PA
Teresa Witherell, Meant to Bee Flower Farm, Oil City, PA
Mary Wooding, Ironwood Organics, Gananoque, ON
Lisa Young, Whitehall, PA
Mary Zastrow, Cockleshell Farm, Riverdale, MD
Stacey Zeabart, Anderson, SC
Allison Zeeb, American Takii, Salinas, CA
Melissa Zimmerman, Dundee, OH

To the Editor:

The Fall 2017 issue of *The Cut Flower Quarterly* is excellent as always, but there is a small but important correction I would like to see made. In Gay Smith's article on local flowers, her lead paragraph states that "A sleeve sporting an American Grown sticker implies that 80% of the bouquet components are U.S. grown". That statement is incorrect in two ways.

First, Certified American Grown flowers and bouquets are 100% U.S. grown. This information can be found on the website www.americangrownflowers.org. This is important because the ASCFG board made it clear (rightfully so) that support for the program would require a 100% U.S. grown rule, and the American Grown program agrees. No foreign flowers are allowed.

Second, I object to the word "implies" because the American Grown program is a "certified" program that has third-party verification to certify that the flowers are indeed U.S. grown. The program monitors and can enforce the use of only 100% U.S. grown flowers, so nothing is implied.

I know that many members of the ASCFG would be concerned if they believed that foreign flowers were being sold under an American Grown label. I hope you will make this correction in the next Quarterly.

Respectfully,
Frank Arnosky
Texas Specialty Cut Flowers

30 Ways to Maximize Your ASCFG Membership

1. Register for the Seasoned Growers' Meeting in New Orleans.
2. Make sure your online Member Page is updated so buyers may easily locate you.
3. Use the ASCFG member logo on your web site, business cards, and sleeves.
4. Apply to mentor a new grower.
5. Read back issues of *The Cut Flower Quarterly* in Members Only.
6. Check in with your Regional Director.
7. Plan to run for the Board of Directors in the next few years.
8. Watch videos of speaker sessions from past meetings.
9. Post questions on the ASCFG Facebook page.
10. Support the advertisers and suppliers you see in this magazine.
11. Discover varieties you want to grow from the Trials Reports.
12. Buy a copy of *Postharvest Handling of Cut Flowers and Greens.*
13. Share the video "Local Flowers, Local Farmers" with your customers.
14. Invite members from your area to visit your farm.
15. Watch for more information about the National Conference in Raleigh.
16. Tell students to apply for the Dave Dowling Scholarship.
17. Create a plan for a Grower Grant.
18. Send us photos of you, your farm, your flowers.
19. Donate to the ASCFG Research Foundation.
20. Check out the Bulletin Board for years of archived information.
21. Apply to be a mentee.
22. Volunteer to be a Trialer in 2019.
23. Write an article for the *Quarterly.*
24. Tell your extension agent about the ASCFG.
25. Purchase the Shopify program to simplify your sales.
26. Promote locally-grown flowers as frequently as possible.
27. Suggest your area newspapers write about your cut flower business.
28. Volunteer to hold an ASCFG meeting on your farm.
29. Welcome new members to the organization.
30. Share your favorite "farm hack" on the ASCFG Facebook page.

30 years 1988-2018 Association of Specialty Cut Flower Growers

2018 Conference and Trade Show

Raleigh, North Carolina ~ Hilton North Raleigh/Midtown

Preliminary Program

Monday, September 24 Beginning Growers' School
Sassafras Fork Farm, Rougemont

IPM for Cut Flower Growers—Stanton Gill
Weed Control—Brenda Smith
Propagating Winter/Spring Crops—Mimo Davis Duschak and Lisa Ziegler
Pricing Cut Flowers—Jennie Love
Postharvest—John Dole
Evening barn dance for Growers' School or Conference attendees!

Tuesday, September 25 Daylong Conference Speaker Sessions

New Varieties—John Dole
Deep Sustainability—Mark Cain
Farm Hacks—Member Participation
Weddings—Lennie Larkin
High Tunnels—Leah Cook
Floral Design—Jennie Love
Peonies—Foxie Morgan
Texture Crops for Design—Carolyn Snell
Soils—Alex Hitt
Evening Trade Show and Floral Design Competition

Wednesday, September 26 Tours and Sessions
Morning Bus Tours to Spring Forth Farm and Open Door Farm
Afternoon Conference Speaker Sessions

Cut Flower Pests—Raymond Floyd
Industry Overview—Debra Prinzing
Lisianthus Production—Linda Doan
Organic Cut Flowers—Lisa Ziegler
Postharvest Handling—John Dole
Evening Banquet and Anniversary Celebration

Ask an Expert!

What are you doing the second Monday of each month in 2018? Plan to spend an hour with one of the ASCFG's flower-growing experts on our Facebook live events! Here's the proposed schedule—watch the ASCFG Member Facebook page for more details.

ASCFG "Ask the Experts" Facebook live!
"All Things Cool Flowers" by Lisa Ziegler took place on January 8.
If you missed it or want to watch it again, it's archived in
the ASCFG Members Facebook in Videos.

January	Lisa Ziegler
February	Lennie Larkin
March	John Dole
April	Jennie Love
May	Carolyn Snell
June	Brenda Smith
July	Janis Harris
August	Mimo Davis-Duschack
September	Shanti Rade
October	Linda Doan
November	Val Schirmer
December	Dave Dowling

Mentor Program

Thank you and congratulations to these matches for the next round of the Mentor Program. The ASCFG is currently accepting Mentor applications for the 2019-2020 cycle, and will process Mentee applications later this year.

Mentor Chas Gill of Kennebec Flower Farm in Bowdoinham, Maine will be paired with Jessie Witscher of Understory Farm, Sudbury, Vermont.

Dave Delbo, Dave's Flowers, Catawissa, Pennsylvania, will mentor Katie Aurand, Back Mountain Flower Farm, Milroy, Pennsylvania.

Mentor Susan Wright, Shady Grove Gardens, Vilas, and Mentee Jillian Mickens, Open Door Farm, Cedar Grove, are both in North Carolina.

Kent Miles, Illinois Willows, in Seymour, will mentor Stacey Shank of Locust Creek Flower Farm in Pana.

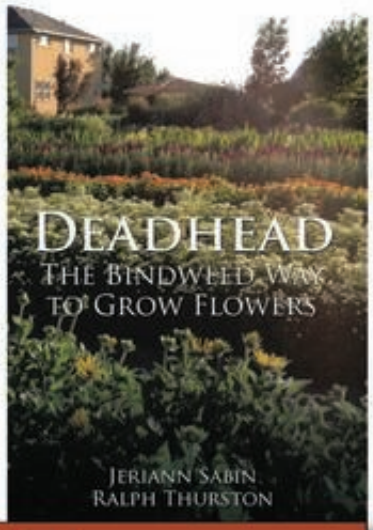
Jessica Weatherford of Scenic Blooms in Oswego, Kansas, will learn from her mentor Ethan Jones of Wild Goose Gardens in Osceola, Missouri.

— DEADHEAD —

The Bindweed Way to Grow Flowers

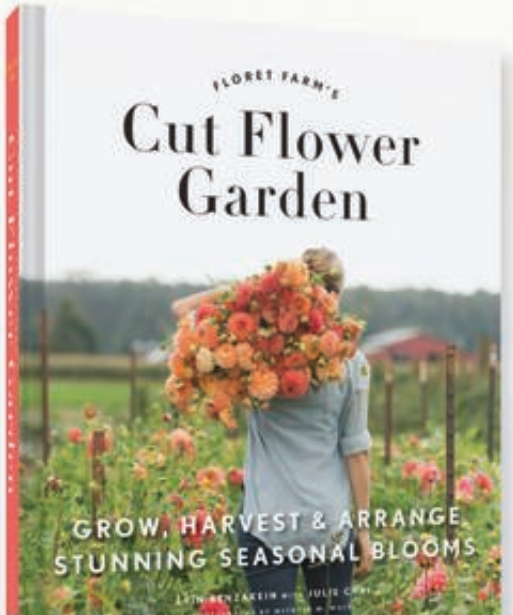
Whether you're ready to take your business to the next level or you're starting your flower farm from scratch, this book can give you a leg up. Part handbook, part business planner, "Deadhead" will help you assess your resources, personal as well as physical, with chapters like the "Importance of Ignorance" and "Testing the Waters".

Don't know your peonies from your asters? Part II of the book addresses the nuts and bolts of flower farming—from seeding and planting to harvesting and processing.



For more information or a link to book sales visit our site at
www.bindweedfarm.com/book.
Available at Barnes and Noble and Amazon.

BE INSPIRED TO CREATE YOUR DREAM FLOWER GARDEN



FLORET FARM'S

Cut Flower Garden

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CHRONICLE BOOKS

God Bless the Potholes Down on Memory Lane

Judy M. Laushman

I'm not particularly sentimental, but I do admit to feeling a twinge of nostalgia last August when I saw my old friend, the phone booth at the University of Washington Friday Harbor Marine Laboratory in the San Juan Islands.

My husband was conducting post-doctoral research there, and we lived in the housing provided for visiting scientists. The views were spectacular: sightings from our deck of bald eagles and killer whales became so frequent that we eventually stopped interrupting our dinners to run outside to gawk. What was not so favorable was the lack of a telephone in our apartment. This wasn't an issue for most of the residents, but for the one trying to get a new trade association off the ground, it was a wee bit of a hurdle.

This was in 1988—long before cell phones were ubiquitous, and at the very infancy (for us, anyway) of online communications. Correspondence was accomplished by phone or letters, typed on paper, mailed through the postal service. Occasionally I was allowed the late night use of the exotic fax machine in the lab offices.

Consequently, I spent many hours in that phone booth under the madrones and firs, juggling a fat spiral notebook, a ballpoint pen, and the Rolodex I'd lifted from Allan Armitage's desk. Keeping one eye on 18-month Dan trundling his Tonka trucks around my feet, I would carefully dial in the 17-digit number from one of the calling cards purchased each month from "the phone company", then the person's number, and hope he or she was there, so this wouldn't be a "wasted" call. The ASCFG's phone budget was minimal, as membership was $55 a year.

I talked to people like Jim Nau and Joe Seals, Ralph Cramer and Cees Kieft, Abbie Blair and Lisa Margulies. We discussed bylaws and committees and board meetings, budgets and spread sheets and membership recruitment.

Most of this was virtually new, if not downright mysterious to me. I had a degree in horticulture, and work experience as a garden center manager, an office receptionist (don't ask), night editor for the *Iowa State Daily,* and a lab technician/plant trials manager. The concept of working with a professional trade association, much less running one, was as foreign to me as becoming an astronaut.

I found a graphic artist on the island who laid out the first (black and white) issue of *The Cut Flower Quarterly*, and she suggested a local printing company run by two friendly old hippies. They introduced me to the folks at the post office who explained that I would have to label each magazine, sort them by zip, rubber band them into bundles with little color-coded stickers, and load heavy canvas bulk mail bags according to their destination, then get those to the post office in time for the next ferry to the mainland.

When I try to recall how I planned and managed conferences in the early years—before email and the internet—I just draw blanks. I'm pretty sure it meant more time in the phone booth and in line at the post office. There is much I don't remember about that first year, but between raising a toddler and raising an organization, I didn't have time for keeping a journal. Likely just as well.

We eventually did get a phone in our apartment, shortly before we left Friday Harbor for Oberlin. And in November of 1990 I got my first computer: an AST Bravo 286. It was probably the size of a piano.

Now the ASCFG office has two speedy laptops (and two slower ones) and its very own fax machine. The only wildlife we see out our windows are college students, and someone else bags and mails the magazine for us. Linda Twining is the ASCFG's most valuable resource, and I'm grateful every day that she handles the phone calls.

Thank you to everyone who has supported me and this little group since the beginning, and those who are now along for the ride. I think it just may work.

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FESTIVUS® Gold
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Ninebark
Striking, dark purple-black foliage

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